EDITORIAL
DOMESTIC ENGINEERING

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SOMETHING ABOUT PRICES.

THERE is a great deal of talk about prices. Some people say they are still much too high and that there will be little business until they come down; some claim that they are about as low in general as they can go without bringing ruin to many; while still others insist that even a slight increase in them would greatly stimulate business. There may be an element of truth in any or all of these claims, but however that may be, it is just as true that price is not the only factor that makes business good or bad. If it were, then cheap goods regardless of their quality or the service rendered with them, or the advertising done or the sales effort made would find a large and ready sale and those who make and sell them should be having a great volume of business. This, however, does not seem to be the case.

Many people have learned through experience that it doesn't pay to buy the cheapest grades in clothes, shoes, and a great many other things, but there are many more who do not buy them because they have been convinced by the propaganda of various interests that it does not pay to do so. This is perfectly legitimate propaganda, but those back of it have been obliged to go before the public and explain various phases of their business. Even the oil and the packing interests have silenced much of the criticism against them through educational campaigns explaining the many different processes and details essential to bringing the finished product to the consumer.

The public does not insist on low priced or cheap goods. It is willing to pay a fair price for an article when convinced that the price they pay is not exorbitant and that the goods or services are of a high quality. But the public does not know a great deal about plumbing, heating or ventilating. They know little or nothing about the involved processes of manufacturing, about installation costs and problems. Nor do they know much about the many different codes, laws, and regulations that must be followed both in the manufacturing and in the installing of the equipment. They do not realize the part that this industry has played in the stamping out of epidemics and making further epidemics less probable. Nor do they give much thought to the health, comfort, and conveniences they enjoy because of the accomplishments of this industry. The blame for this condition, however, falls on the industry itself for not making persistent and well directed efforts to furnish them with this information. It is for this reason chiefly that we find at the present time in many places that legitimate contractors are losing a considerable amount of business to a certain class of fly-by-nighters and other irresponsible would-be contractors who are getting business on a price basis alone and are giving the cheapest both in material and workmanship. By the time the people having the work done discover their difficulties with this kind of plumbing and heating, the one who did the work is either out of business or cannot be found, and the trade gets another black eye. There is only one way to prevent this and that is to take the problem straight to the public in an educational campaign. All branches of the trade would benefit from such a movement, and, therefore, all should be interested in such a movement and seeing to it that it is carried out. Something has been done along this line already, but the efforts have been more or less sporadic. United effort is required and that soon in order that the public itself may be protected and the industry saved from the damaging work of the unscrupulous.

GETTING INTO FIGHTING TRIM.

WHEN Jess Willard fought Jack Dempsey he had been living an easy life for some time. He had not taken the coming battle very seriously and was not in fighting trim. The result was that he lost. There are some men engaged in any calling or any line of business who become a little flabby when business comes easily, and refuse to give serious consideration to the fight for business that always takes place when times change. But that fight always comes and always finds some prepared and some who have decided that prosperity should be theirs by right of merely being in business, or who are too mentally and physically lazy to "train down to weight." Their overhead stays about the same, but their volume of sales decreases and their prices are forced down. Some of the surplus weight in the plumbing and heating business has been worked off, the industry is fast getting into fighting trim, and from present indications the "gate receipts" during 1922 in the building industry are going to be large enough to make it worth while to put up a real battle for the winner's end, but anyone who expects to share in the winnings must eliminate all extra poundage and be ready to put in some hard, clean blows.

WATER SERVICE *and* FIRE PROTECTION *for an* ELEVEN-STORY OFFICE BUILDING

By Ed. Cunningham

THE water service of a modern office building is of the highest importance. The building cannot function properly without a comprehensive and elastic pipe design to distribute water for sanitary purposes, for lavatories, for cleaning the building, heated water for washing, cooled water for drinking, water for the boilers, and that very important provision—fire protection. In fact, the major activities of the building depend on the movement of many hundreds of gallons of water hourly. An interruption in water supply would necessitate the closing of the building. It may function without heat and to a great extent without elevator service, and without phones, but an extended interruption of the water distribution would cause the locking of the doors.

So it follows that the engineer gives to the problem of uninterrupted water distribution the most thoughtful consideration. In the design of the apparatus, and the system of piping, care is taken everywhere to by-pass main fixtures, such as pumps, filters, heaters, tanks, etc., so that two or more means are provided for delivering the kind of water required at the point or points it is to be used. Two exceptions to this are practically universal. It is not permitted to by-pass meters, and it is not permitted to take water out of the fire lines for any purpose other than fire protection. Meters are, however, always provided with cutout valves on inlet and outlet so that they may be taken out for examination and repair. But the only means for cutting around them with water is through another meter. Hence two or more meters are used, and any by-passing, which is desired, is attended to after the water has passed the meter. Water may not be taken out of the fire lines, but as elaborate provision as wished may be made for by-passing into it. So that every by-pass leading from house pumps, or from the house tank lines, or from steamer connections outside, is furnished with a check valve closing against the fire lines.

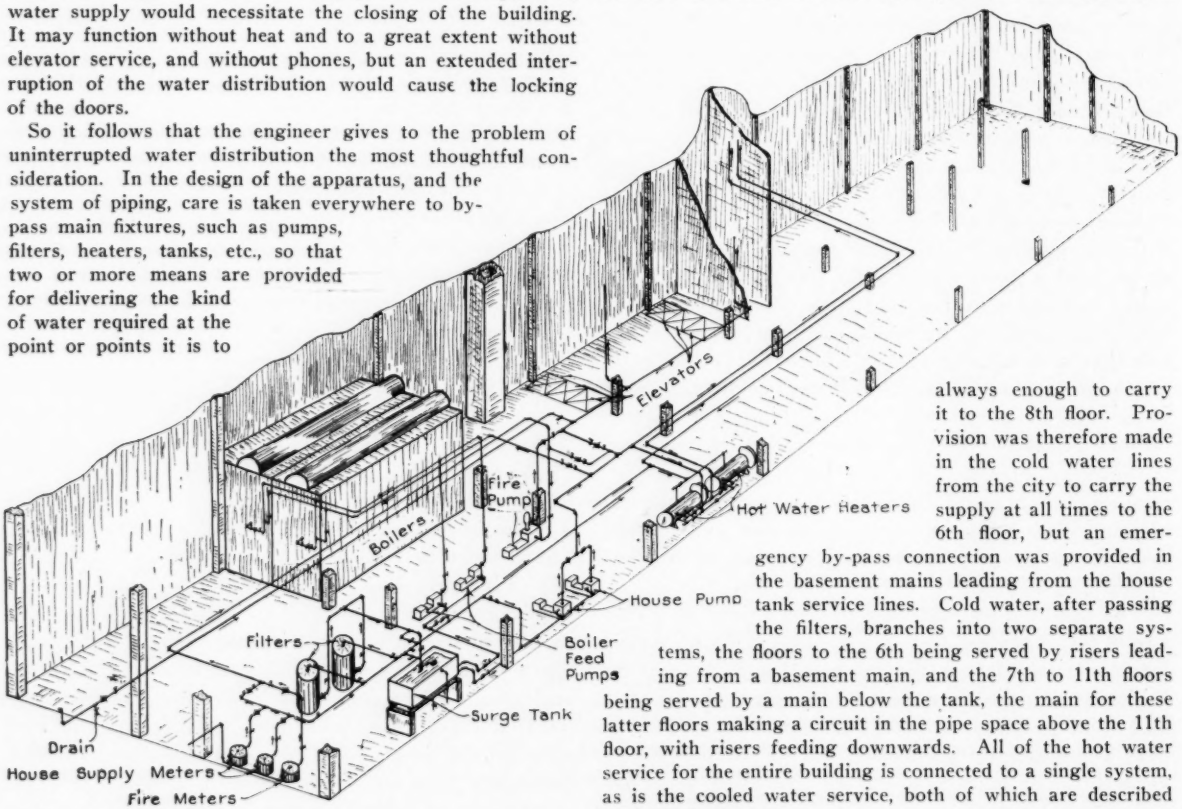


Fig. 1.

The present description of the water supply for an office building deals with a lay-out for an eleven-story building, and covers the cold water, hot water, cooled water, and fire protection lines. The city pressure is sufficiently high at times to elevate water to the top of the building, and is always enough to carry it to the 8th floor. Provision was therefore made in the cold water lines from the city to carry the supply at all times to the 6th floor, but an emergency by-pass connection was provided in the basement mains leading from the house tank service lines. Cold water, after passing the filters, branches into two separate systems, the floors to the 6th being served by risers leading from a basement main, and the 7th to 11th floors being served by a main below the tank, the main for these latter floors making a circuit in the pipe space above the 11th floor, with risers feeding downwards. All of the hot water service for the entire building is connected to a single system, as is the cooled water service, both of which are described in detail farther on.

The two general toilets are both located on the 6th floor, so that the principal demand for cold water service is carried by the city pressure. This results in much saving in power, since 10 cubic ft. of water lifted that high per hour, represents an expenditure of one horse power; and of course there are many times 10 cubic ft. of water used every hour in this service.

At the front end of the building there are shown three meters. Two of these are for the house service, and one for the fire pump connection. Each of these is provided with a full opening gate valve on each inlet and each outlet.

Lines lead from the house service meters to a point overhead where they are connected into a main. This main leads through the building, making a circuit of the basement, as per the following detail: The normal passage of the water, shown in Fig. 1, is through one of the filters, one being a reserve, and from thence leading one line to the surge tank, with a separate connection to the 6th floor system which is run in the basement. A by-pass connection is made direct from the cold water main to the surge tank, so that the surge tank may be served direct from the cold water line without passing through the filters; next in line is a gate valve, which is normally closed, but which permits water to be delivered direct from the meters to the 6th floor system.

A detail of the filter connections is shown in Fig. 2. These are so piped as to permit by-passing of each or both filters through its own system of pipe work and also indicate the method of re-wash, the means used to introduce a precipitating medium, and indicates the point of entry and exit of water, while the sectional view at the right indicates the internal construction.

from each pump is joined into a single main which connects to a riser leading to the house tank located in a pent house on the roof.

As indicated in plan in Fig. 1, and shown on the riser diagram in Fig. 3, the cold water main leading from the filters is extended into a circuit which leads around the basement with risers leading upward to the 6th floor, supplying the office lavatories, the small toilets and the slop-sinks on each floor, and the general toilets and barber shop on the 6th floor. From the bottom of the house tank a connection is made which is extended into a cold water main making a circuit in the pipe space above the 11th floor and connecting a system of risers which serve the floors from the 11th to the 7th. Cold water is delivered to the house tank at the top, and the level maintained by a float valve. An overflow pipe leads from a higher point and is extended down to the boiler room where it acts as a tell-tale in the event of the float valve becoming inoperative. A cross connection is made from the bottom of the tank to this pump-discharge line, being provided with a check valve so that movement is only outward from the tank along

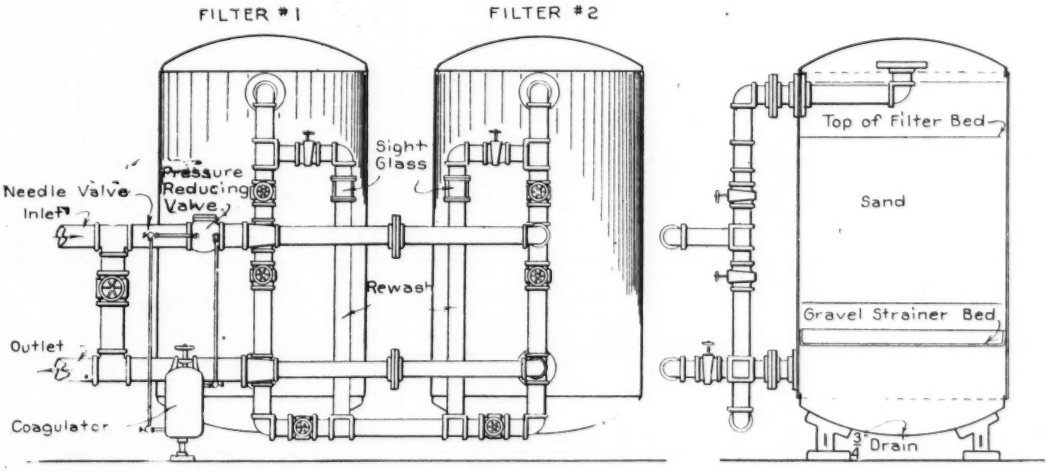


Fig. 2.

Water is delivered from the filters to a surge tank. This is an oblong steel tank with an open top, covered with a wooden platform or floor. Water is discharged to the surge tank by means of the city pressure acting through the filters, and the level maintained at a constant point by means of a float valve. An overflow pipe is provided, leading to a drain, in case of the failure of the float valve to function. A drain connection is made in the bottom for emptying the tank. Normally the surge tank serves the house pumps and the boiler feed pumps. By-pass connections are made to both sets of pumps so that they may be served direct from the cold water main, either before or after filtering.

The boilers are supplied with water by lines leading from each pump, joining into a single main, with a separate connection leading to each boiler, each being provided with check valve and two gate valves. A separate line leads from the house service main direct to the boilers for filling and cleaning purposes. A hose connection is also provided in this line, connected to a hose rack in boiler room. Each pump is of sufficient capacity to serve both boilers, one pump being a reserve unit.

The house pumps draw their supply from the surge tanks, with by-pass provision for direct supply from cold water main. As in the case of the other pumps, one is a reserve, but both may be put in service at once. The discharge line this line. This permits the delivery of water back from the tank along the pump-discharge line when the pumps are not in operation. This arrangement obviates the necessity of running a separate line back to the hot water heaters and permits a connection to be made direct from the horizontal main in the basement leading from the house pumps to the house tank. This cold-water connection is provided with a gate valve and check valve, and puts the hot water heater under the full pressure head due to the total elevation of the water in the house tank.

The hot water service is in a single unit serving the entire building in one system of pipe work. The risers and connections are shown in Fig. 3, and a detail in Fig. 4 shows the connection at one of the heaters, there being two in the battery, each having sufficient capacity to raise the temperature of all the water required from 50 degrees to 180 degrees F., with exhaust steam.

The heaters consist of an outer steel shell housing a series of brass tubes, these tubes leading to end chambers, the steam entering one of these chambers at one end, passing through the tubes and into a chamber at the other end. Exhaust steam enters a line at the top, through a diaphragm valve. This valve is normally open. The temperature of the water leaving the heater is kept at any predetermined point by means of a temperature regulator set into the top of a tee on the hot water supply line, and having an

extended stem projecting into the vertical outlet from the heater. This temperature regulator contains a volatile liquid which expands and acts on the diaphragm valve through the flexible tube to partially or wholly close the steam inlet valve when the water is sufficiently heated. Circulation is maintained by a return hot water main of smaller diameter, which enters the bottom of the heater. The hot water supply line is provided with a gate valve, and the circulating return line with a gate valve and a check valve. A cold water connection is made direct from the horizontal cold water main in the basement leading to the house tank, and this line is also provided with gate valve and check valve. In the event of the closing of the valve on the hot water supply line, which would confine the water and tend to rupture the heater, relief for the pressure resulting from this is provided for by placing a relief-valve on the line leading to the return opening of the heater, and inside of all the gate and check valves. A drain connection is provided on this line also.

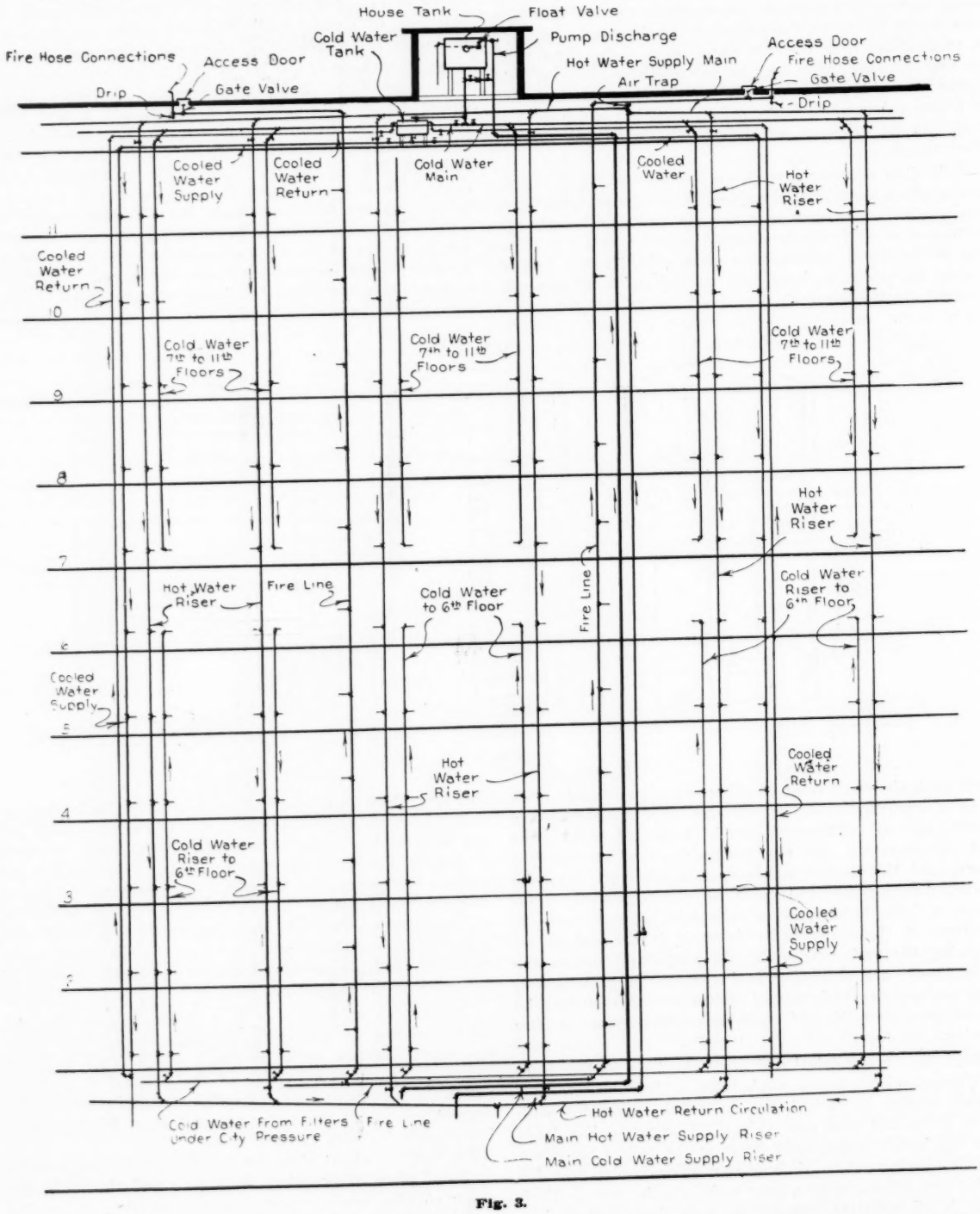


Fig. 3.

Condensation from the steam is collected at one end of

each heater and discharged to the heating system returns through a large steam trap, this being by-passed so that condensation may be discharged direct when the trap is undergoing repairs.

As shown in Fig. 3, the main hot water supply line is extended up direct to the pipe space at the top of the building. At the highest point an air trap is installed to relieve the air from the system, this trap consisting of a cast iron shell with a connection in the bottom which vents the riser; a float is inside the shell with a lever extending to and operating a valve mechanism which controls a vent opening at the top. When all of the air is discharged the water rising in this trap raises the float and closes the vent. From the highest point a main makes a circuit in both directions, and risers are taken from the bottom of this main leading downward and supplying the fixtures throughout the building. These risers are reduced one size near the bottom, and extend down into the basement and join into a return main which leads back and connects to the bottom of the heaters, thus completing the circuit and providing for continual circulation of hot water through the system.

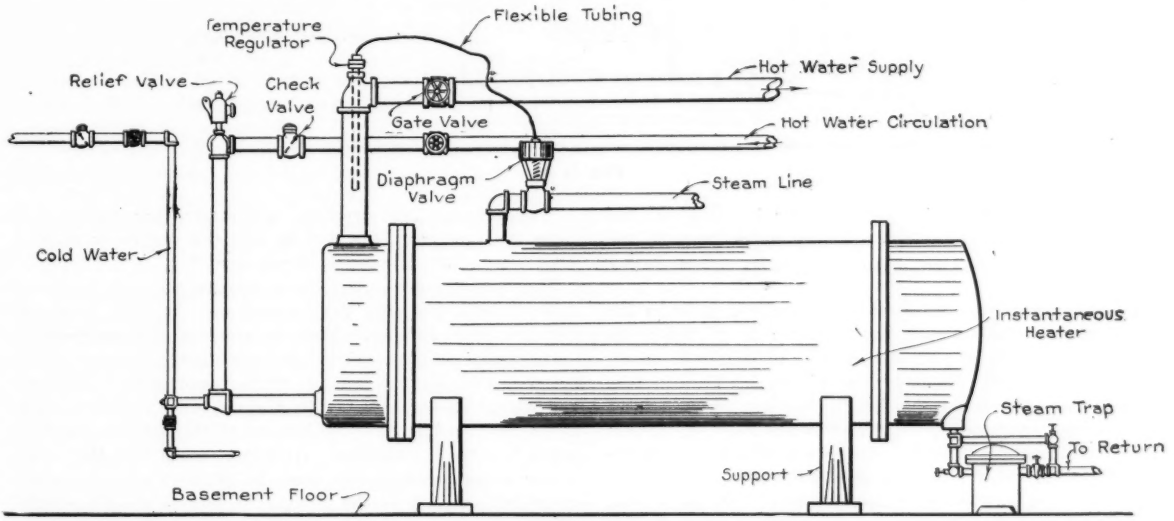


Fig. 4.

The ice water, or more properly, the cooled water system is just the reverse of the hot water system. A closed tank made of steel is placed in the pipe space below the house tank. A brine coil is inside this tank for chilling the water. A connection leads from the house tank cold water line to the top of the cooler tank. A line leads from the bottom of the cooler tank and is extended horizontally in two directions and connects to two risers which lead downward and supply the bubbling drinking fountains, two being located on each floor in the hallway. Each riser is continued full size to the lower three floors, where it is reduced one size and continues to the basement; a further reduction of one size is made there, and a return line led back to the top of the building and connected near the top of the cooler tank. Circulation takes place downward to the fixtures and as the line has absorbed some heat, it readily ascends on the return circuit.

The feature of most absorbing interest is the very elaborate system of fire protection. This begins with the meter at the front basement wall. This meter, like the others serving the house supply, is provided with gate valve on the inlet and the outlet, and also, as are the other two, provided with a check valve to prevent the back-passage of water which has been measured by the meter. The meter itself is not by-passed, but the main leading from it is by-passed so that water may pass in the one direction only from the house-meter to the fire-meter. A check valve controls this. The line from the meter continues on and connects to the suction line of the Underwriters' fire pump. A detail of the connections at this pump is shown in Fig. 5. This pump is kept continually under steam. A high pressure steam line leads direct from the boilers; connected into this line, and provided with a by-pass arrangement of three valves, is an automatic pump governor. This is set to maintain a pre-determined pressure, and is controlled by a ¾-inch line leading from the pump discharge line. The two valves on the horizontal branches leading to the pump governor are normally open, the valve on the vertical side being closed. An automatic sight feed lubricator is placed in the steam line above the pump governor, so that the valve mechanism of the governor, as well as the steam cylinders of the pump, is continually lubricated. A test connection is provided on the discharge side of the pump, and this is opened daily for a few minutes to lower the pressure and test the pump action. It also has the additional effect of clearing the upper air chamber of water.

A rather bewildering array of valves, check valves and by-pass lines are connected into the pump and fire lines. Normally the suction of the pump is directly on the line leading from the fire-meter, and the discharge is directly to the fire lines. All other connections are emergency connections, and all are kept closed off normally. The fire lines extend in two risers, with a hose rack and extra heavy solid brass gate valve on each line at each floor, with an extension from each out to the roof. Each extension to the roof is provided with a gate valve, with an access door placed in the roof just above the valve. All of these valves are kept closed normally, and those leading to the roof are provided with small drip valves to prevent the accumulation of water in the line above the gate valve, which would freeze and render the roof connections useless. The drip valves remain open, except in the event of the lines to the roof being in use, when they may be closed.

The use of by-pass connections and the fire protection system are as follows:

In the event of the fire pump being inoperative, or insufficient for the demand, a by-pass leads from a steamer connection outside the building, around all other by-pass valves, and around the pump, directly into the fire lines. This may be used in conjunction with the pump, or independent of it. A check valve closing against the house lines, and a gate

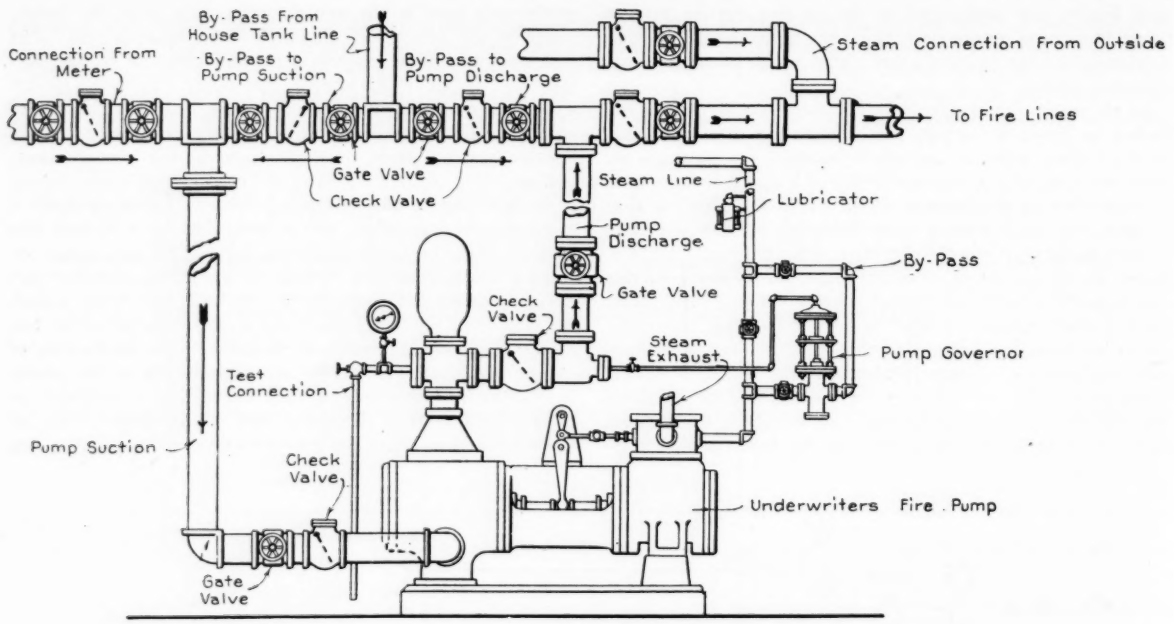


Fig. 5.

valve are located in the basement of the building on this steamer connection. In addition a drip valve protects the line leading to the outside to prevent water accumulating and freezing.

By-pass connections lead from the house tank main in the basement connected to both the suction side of the pump in case of the failure of all other sources of supply of water, and connected to the discharge side of the fire lines in case of the failure of the fire pump itself. Further, through these same by-pass connections, the house pumps may be brought into action and pump directly into the fire lines independently of, or in conjunction with, the fire pump.

All of the fire lines are extra heavy fittings and heavy pipe, with heavy gate and check valves and all pipe and fittings are galvanized. All other pipe and fittings throughout the water service are standard weight galvanized except the cooled water lines which are all of brass with double unpolished nickel-plating inside and outside, except where exposed, all pipe and fittings are polished.

The house tank, the cooler tank and the surge tank are of black iron, heavily asphalted inside and outside.

Farmers Well Able to Pay for Modern Plumbing and Heating.

The research bureau of the Copper Farm Press finds that the farmers of the Mississippi valley are a great deal better off than some folks have been trying to make the world believe they are.

In its report, based upon the findings of 5,000 bankers, wholesalers, county agents and chambers of commerce, it states: "The farmer's financial condition is very good, his net standing being higher than in any normal preceding period, comparing unfavorably only with the short peak of the war time prosperity.

"Apparently no section is so badly off that the farmer cannot secure credit and capital for the necessities of his farm home or farm business. The average farmer has either cash or credit for all farm necessities.

"Sales possibilities exist in the greatest degree in Missouri, Arkansas, Wisconsin, Minnesota, Illinois, Iowa, with Nebraska, Kansas, Oklahoma, Texas, Wyoming and Indiana following.

"The average farm property in this area has increased in value 96.5 per cent in a decade, and the decline from high peak prices has only been 15 per cent."

The report shows that farm mortgages have increased only slightly, and that the farmers own in their farms, 88 per cent free equities. This, in spite of the purchase of many farms at peak prices, on long time. The two states listed as offering the greatest trade opportunities—Missouri and Arkansas—are largely in Kansas City territory. The other states, while near the bottom of the list, are far from being in a "bad" condition. At a conference held this week, it was suggested that some steps be taken to get the government to loan back to the citizens of Kansas the $80,000,000, which they have now in postal savings with the government. If this is accomplished, it will, undoubtedly, tend to make money easier. But a state is not "broke" that has eighty millions in government savings.

In this connection, someone points out that it might help, if something was done about the $68,000,000 that was spent during 1921 for auto accessories, and gasoline in Kansas.

Taken all together, these facts ought to suggest to plumbing and heating contractors that there is still some business to be had among the farming communities of the Mississippi valley; and that if a state can spend over $68,000,000 on gasoline and auto accessories, and save up in postal savings alone such a neat sum as $80,000,000, there ought to be some money around there for bathtubs and other sanitary plumbing and also for modern heating systems.

Wholesale Commodity Prices in Great Britain are now 70 per cent above pre-war levels, according to the index number issued by the London Economist.

By a vote of 40 to 2 the Republicans of the Senate in conference voted down a suggestion made by Senator Harrold of Oklahoma that the collection of interest on the debt owed by foreign nations to the United States should not be deferred beyond three years.

The Most Valuable Cargo to be received from Germany since the war has come into the port of New York on the steamship Hudson of the United States lines. It consists of 4,311 tons and was valued after payment of duty, which averages about 10 per cent, close to $10,000,000.

MODERN UTILIZATION *of* ANTHRACITE COAL *with* SOME NOTES *on the* CONSTRUCTION *and* OPERATION *of* STOKERS

By John Van Brunt

(Continued from Page 166 in the January 28th Issue.)

Referring to the Fig. 1, it will be noted that the ignition is obtained by the radiation from the main arch and the amount of the radiation is that included in the angle or wedge A. The primary ignition must be obtained before the fuel passes over the first draft compartment. If this occurs, then the combustion that takes place over the first compartment accelerates the ignition through the entire depth of the fuel so that at some point between three and four feet from the gate the entire depth of fuel is fully ignited. From this point the ash begins to form gradually thickening until the fuel is burned out. The proportions of the furnace and arch in Fig. 1 are those for anthracite and coke breeze. For bituminous coal the arch may and should be very much shorter; probably one-half the length shown would be ample.

By prolonging the line of extreme radiation from the inner point of the arch, it will be noticed that it will intersect the lower boiler tubes only a few inches from the bridge wall. Thus the front end of the fuel bed or ignition point is shaded from the tubes and cannot radiate heat to the tubes. The relative amount of radiation received from the arch and radiation from the ignition point to the tubes must be closely watched in anthracite furnace design so that the former always exceeds the latter by a safe margin.

The operation of the stoker is extremely simple when the underlying principles are understood, or when firemen have been trained by competent operators. In passing, it may be mentioned that the old time hand fireman is the poorest judge of what a stoker fire should be. The efficiencies that they obtain, if left to their own judgment, would make the angels weep. These men like a good bed of fuel eight inches deep

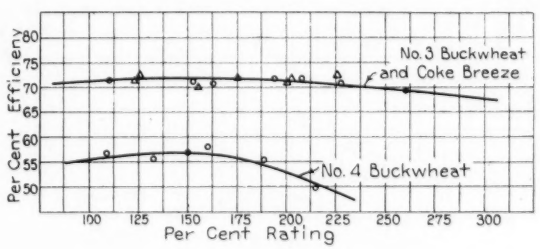


Fig. 3.

as in hand firing, losing sight of the fact that the bed in hand fires was mostly ashes.

There is a definite relation between the size of the fuel and the correct fire thickness. One would hardly attempt to burn egg anthracite in a bed only three inches thick nor pea coal twenty-four inches thick. The correct thickness is in some direct relation to the size of the coal. The smaller the coal, the thinner the fire.

On No. 3 Buckwheat, for example, we find that a thickness of from 3 inches to 4 inches will give the best results. The speed of the grate may be anywhere between 10 and 50 ft. per hour.

Now as to air pressures. A general rule which we follow is to use as much air in each compartment as the fire will stand. Beginning at the front end with No. 3 Buckwheat, the pressure will usually be the highest, and high enough to produce a white hot fuel bed and a gentle boiling or bub-

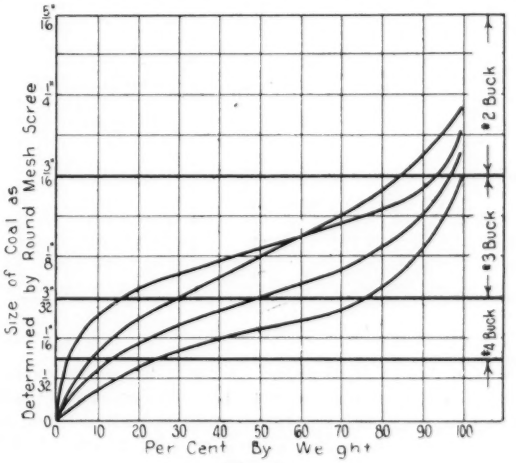


Fig. 5.

bling, so to speak, of the bed above that compartment so that some of the coal is lifted a few inches off the fuel bed. If the coal is coarse, say like No. 2 Buck, black spots will appear if too much air is used. If too little pressure is carried the bed becomes a bright or dull red, the atmosphere above it clear and transparent. Under such conditions C. O. is produced in excess, and continued combustion through the boiler with high stack temperatures will result. The second compartment also carries as high a pressure as the fire will stand, as will the third. However, there is one modification to this which is: The pressure in second or third or subsequent compartments must be modified so that the fuel bed will be burned out directly above a partition between adjacent compartments. Usually it will be found that only half to two-thirds of the grate need to be used for ratings up to one hundred and fifty-per cent. The rear end is reserve capacity when 200 per cent or more is required.

To handle this type of stoker intelligently multiple draft gauges are necessary, such as the Phile or Ellison, 4 or 6 tube gauge. A differential gauge for over fire pressure is necessary also. Frequent checking with an orsat or similar gas analyser is desirable to determine whether too much air is being used.

Probably the most common fault in operation is that of deficient air at front end which results in high temperature

of exit gases and flame through boiler. The CO_2 will usually be around 15 per cent with perhaps only traces of C. O. making the operator think he is doing remarkably well. The appearance of the fire at the front end will indicate the cause, too little air, fire dull and atmosphere clear.

All of the foregoing applies to the burning of coke breeze

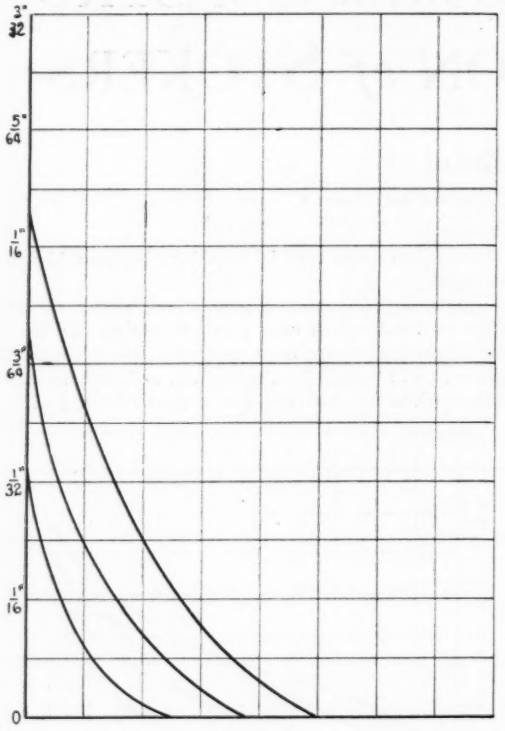


Fig. 6.

as well as No. 3 Buckwheat. In fact, the performance is very much the same even as to the efficiency and capacity.

As to capacity with a ratio of grate to boiler heating surface of 1 to 40 with No. 3 Buck or coke breeze of 10,000 B. t. u. as fire, it is easily possible to run continuously at 175 to 200 per cent of rating at an efficiency of 69 to 71 or 72 per cent with properly sized coal.

The upper curves in Fig. 3 show the relation of capacity to efficiency with No. 3 Buck and coke breeze. It is remarkably flat over a wide range of capacity.

The lower curve is for No. 4 Buckwheat and as you will note the efficiency is much lower than for No. 3 Buck.

During our early work we found considerable variation in efficiencies, on what appeared to be exactly the same coals as far as ash content and heat value were concerned, and in our search for the cause we found that the sizing was of great importance (see Fig. 4).

The next slides were prepared to enable the influence of undersize to be visualized (see Fig. 5).

The first one shows a plot of screening tests of four different coals, three of them No. 3 Buckwheat and one a No. 4 Buckwheat, all of which may be assumed to have the same heat value.

The next chart shows the influence of forced draft on the undersize.

The lower curve to the right in Fig. 6 may be taken as referring to ½-inch water pressure under the grate. The next one to 1 inch and the upper to 1½ inches.

From this you may understand that the reason for the low efficiency with No. 4 Buck or similarly sized coal is due to a larger ash pit loss, and that at any given rate of combustion this ash pit loss bears some direct relation to the amount of undersize in the coal. Also that an increasing percentage of undersize in No. 3 Buck increases the ash pit loss and lowers the efficiency.

So far we have found no way in which this loss can be materially decreased. It appears to be an unavoidable loss. By increasing the size of stoker and decreasing the combustion rate the loss may be decreased but the resultant gain is hardly enough to pay for the increased size of stoker.

We have claimed that the stoker will burn anything that is black and some things that are only gray. Perhaps we should say any fuel that is black. At any rate, as applied to coal the statement is true. Naturally all such fuels cannot be burned at equally good efficiencies. Some are too *black* perhaps, but it can hardly be said that any are too poor to be satisfactorily burned.

The curves on graph Fig. 7 show the relation of efficiency to capacity obtained on a number of tests in a modern central station installation. The upper curve is that of overall boiler, superheater and economizer efficiency, the lower boiler and superheater. Three different grades of coal were used designated by circles, triangles and squares. The squares represent points obtained with coal of 14 per cent moisture, and 32 per cent ash, and the others 16 to 20 per cent moisture and 14 to 20 per cent ash.

These results may be expected on any similar settings with coal of like character, such as Illinois, Iowa, Missouri coal. The only limit to capacity is the furnace brickwork. Such fuel can be readily burned at 60 and 70¾ per sq. ft. of grate.

It may interest you to know that Rhode Island anthracite No. 3 Buck size has been successfully burned. This is a graphite anthracite of but 2 per cent volatile. The coal that may be considered as being too black is the high grade eastern coking coal. The ash content is usually too low to afford adequate protection to the grates and the coking characteristic such that it is often impossible to keep large masses of coke from forming and segregating on the rear end of the stoker and going into ash pit unburned. With such coal as this the efficiency will range from 65 per cent to 72 per cent when burned on stokers designed and set for anthracite

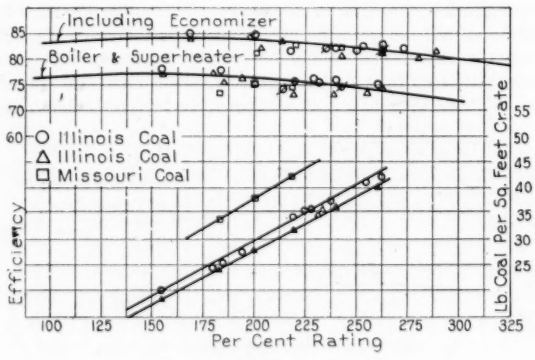


Fig. 7.

coal. If the combustion rate can be kept high enough, any 40¾ to 45, and a small stoker with short arch used, much better results can be secured. Such tests as have been run clearly indicate an improvement in efficiency would result under such conditions.

Inasmuch as all of the installations made in the East are for burning anthracite, there has been little opportunity to do much work of value along this line.

Some of the installations, however, are burning Pennsylvania coals with marked success.

KINKS *for* STEAM FITTERS

Simple Methods for Solving Several Puzzling Problems

By W. H. Wakeman

Piping Ovens for Steam Heating.

Fig. 1 illustrates the piping as arranged for heating three ovens by steam at high pressure. Steam enters at the left hand, goes up into the coil shown in section in the first oven, and thence into the second and third in the same way, discharging into the trap at the right hand. Three pet cocks were provided as shown, and the engineer

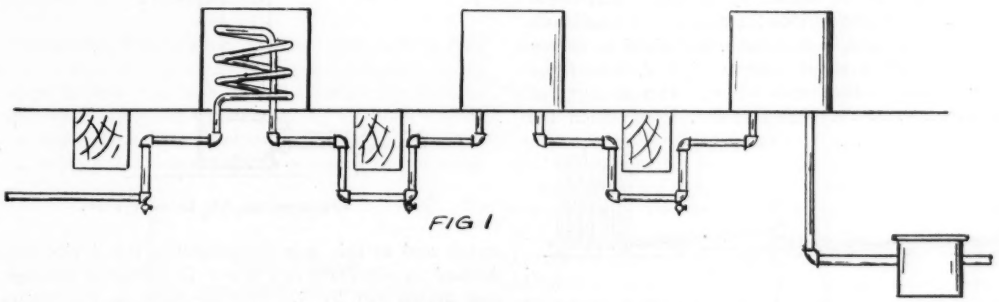


FIG 1

found it necessary to open these about once an hour and blow water out on the floor, as otherwise it would collect in the pipe line and lower the temperature in the ovens, as no other means were provided to dispose of it. If the drip pipe had been left open to the atmosphere, this water would have been blown out without opening the pet cocks, but that would result in waste of much steam.

Fifteen ells are included in this pipe line, which makes it appear as if somebody was anxious to sell as many fittings as possible.

Fig. 2 shows the way in which this job ought to have been piped. The first upward turn of the pipe is provided with a tee instead of an ell, and a small drip is carried down to the main return line, therefore only dry steam will go to the first oven. Steam that is condensed in the oven either drops backward into the first drip pipe, or else is carried forward to the second, leaving only dry steam for the second oven, and likewise for the third. This provides

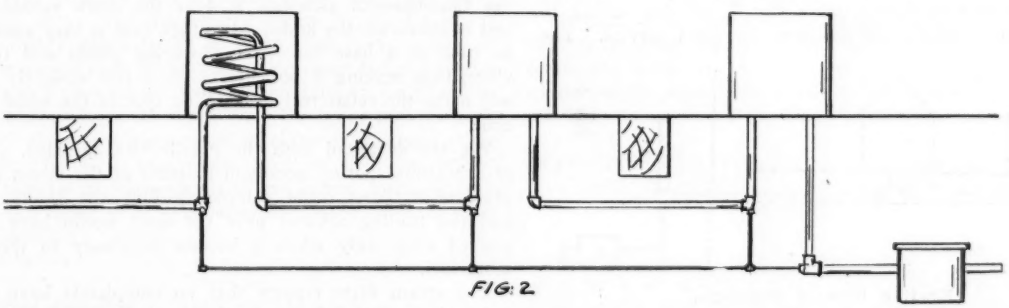


FIG. 2

dry steam constantly and the system calls for no attention from the engineer, as it is perfectly automatic.

The three drip pipes shown should be of small size to give best results, because large drip pipes will prevent forced circulation through the coils, because they carry full pressure directly to the trap. If the main pipe is 2 inches or larger, the drips should not be more than ½-inch. Only five ells are used in this improved device, making the first cost lower, with less threads to maintain in service.

Fig. 3 shows three ovens in another plant, that are heated by low pressure steam, which enters at the right hand and travels through the ovens in series, as shown in section by the third at the left hand. No provision is made for properly draining these pipes. The inlet pipe is higher than the

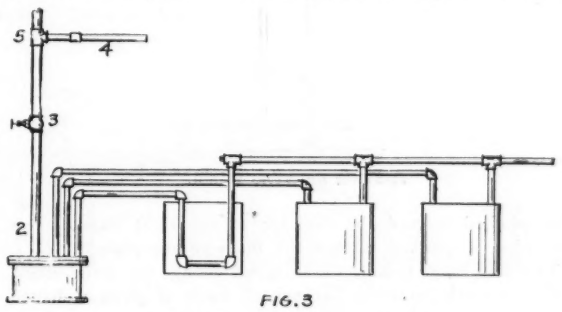


FIG. 3

outlets, each of which is carried separately to the trap. If such a system is fitted with a tilting trap, it will be drained better than with any other kind, because when it has discharged and goes back to the filling position, there will be a rush of water to fill the vacant space, thus clearing the loops shown, by creating a forced circulation.

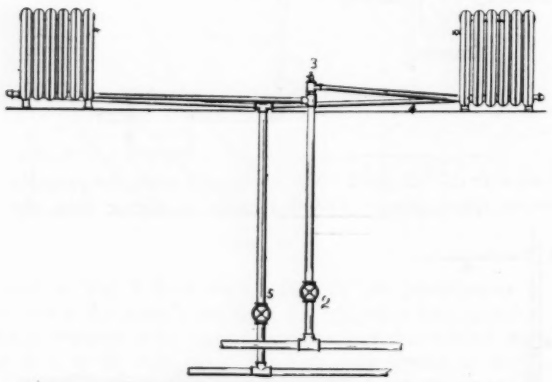
An annoying and expensive defect in this system developed

in practice. The vertical pipe, 2, is the drip pipe from the heating system of the factory. The valve, 3, was not in the original outfit, as the steam fitter concluded that it was not necessary, because all pipes discharged into one trap under equal pressure. The branch drip pipe which drains all water in pipes in the first story, is shown at 4, and others are likewise arranged for stories above it.

This gave satisfactory service as long as the heating system was in use, but when warm weather made it unnecessary, steam from the three ovens backed up through the trap into the heating pipes, and made the rooms too warm. When complaint was made to the superintendent, he stated that as they had been satisfied with it for several years, he thought they ought to be now. However, he had the branch pipe removed from 5 and a plug substituted. This made a remedy for the first story, but the others continued to be too warm. As the engineer was insistent, a valve was installed at 3 and it saved enough coal in three days to pay the bill.

Heating An Attic Room.

An attic room was to be heated by radiators that could be controlled without going up into the room. Two radiators without valves were placed in this room, and piped as shown in the illustration. The steam supply pipe, 2, was fitted with a valve located in the room below. It was supplied with an air valve, 3, at the highest point, from which the



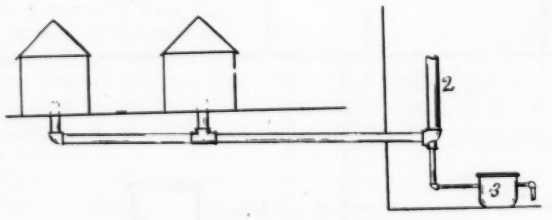
Heating an Attic Room.

pipe pitched toward the radiator at the right hand. The drip pipe, 4, pitched toward the main return pipe, 5.

The left hand radiator was piped along the same lines, and both work perfectly, because all water is given a chance to escape without thumping and pounding.

Heating Isolated Buildings.

In a certain plant it was desired to heat two isolated buildings where explosives were stored, without having to go to them to adjust the radiators for good service. The



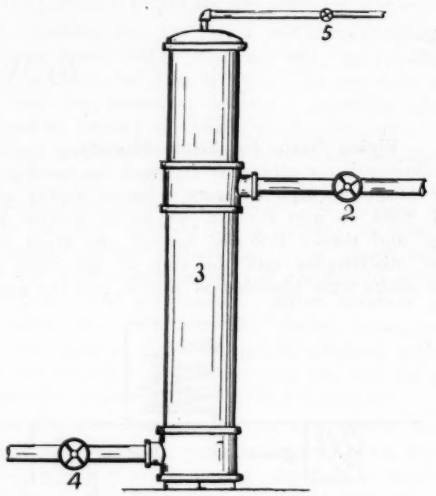
Heating Isolated Buildings.

illustration shows the practical plan submitted for this case.

Steam is supplied through the vertical pipe, 2, and all water that it may contain falls into the reducing tee, and thence into the trap, 3. The horizontal pipe, 4, is given pitch toward pipe, 3, and as this pipe is larger than would be required for the steam pipe of a two-pipe system, all water drains back to this pipe, 3. If steam is shut off from these buildings during cold weather, the radiators will not be damaged by frost, as all water has escaped from them.

Eliminating Air from Water.

Owing to peculiar conditions, more or less air was drawn into the pumps which supply a part of our plant with



Eliminating Air from Water.

water, and as this was objectionable, the device shown was devised to eliminate it. Water is delivered through 2 to 3 and drawn out by 4. The air rises to the highest point in 3 and escapes through 5 which is a small pipe that delivers it to a place where it can always be used. The operation is very satisfactory.

Cumberland, Md., Steam Fitter Discovers New Boiler Covering.

An inadvertant error that may revolutionize the entire heating business was recently made by a Cumberland, Md., steam fitter. Like many great discoveries, this new contribution to scientific heating came purely as a matter of chance. The steam fitter, a correspondent informs us, in looking over his stock, mistook a certain amount of fertilizer he had on hand for asbestos. This incorrect analysis of his material finally became so firmly established in his mind that, when the occasion required, he had it made up into a nice plastic compound and used it for a boiler covering.

While the new covering is much more expensive than the time-honored asbestos, it does the work satisfactorily and it possesses the added advantage that it may some day be used as a base for ferns, flowering plants and trailing vines, thus making it possible to cover the unsightly boiler and make the cellar truly an artistic spot in the home beautiful.

We are delighted with the possibilities unfolded. Think of a beautiful potted geranium in front of the steam gauge. Maidenhair ferns could completely hide the safety valve, and the trailing arbutus over the door would have to be pushed aside only when it became necessary to throw in more fuel.

The steam fitter reports that no complaints have arisen from the unique departure from custom, and this fact, coupled with the only outstanding thing we know about fertilizer, leads us to believe that the cellar must be especially well ventilated.

Success may also be spelled w-o-r-k.

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

MISCELLANEOUS INTERESTING PLUMBING PROBLEMS.

Editor, "Domestic Engineering":—How long will it take 15 gallons of water boiling at 20 lb. steam pressure, laying in a flat open ⅜-inch coil in a 40-gallon open top tank of water to boil away as steam? See Fig. 1. In plain words, how long would it take 15 gallons of water in the 30-gallon tank to boil away into steam, at 20 lb. pressure by the main

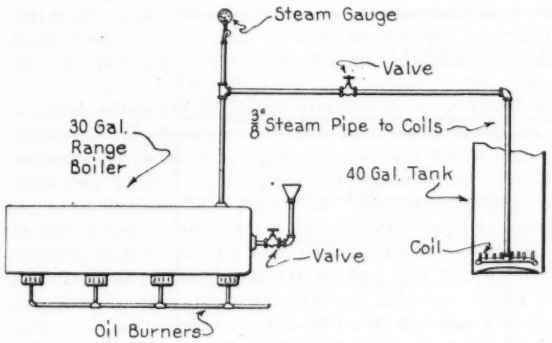


Fig. 1.

⅜-inch valve wide open to the coil into the tank? The other 15 gallons of water in the range tank are supposed to be in the tank after the other 15 gallons have become steam, and escaped through the ⅜-inch coil into the bottom of big open tank.

I have a party who lives in the country, and who has no water works pressure, only a cistern in his yard. His water is always dirty. He has electric lights in the house. I thought that I would install an electric air pump, pump air into a storage air tank, fill up a 60-gallon range boiler with this cistern water, turn the air from the air tank to the 60-gallon range tank, and force the water from the range tank through the filter. Do you think it would be easier or cheaper to take a 52-gallon barrel of rain water, drop an air cellar siphon drainer into barrel, turn air on to air siphon from air tank and let the water from the barrel be forced through filter by the siphon?

Kentucky. B. J.

You have furnished a "hard nut" to crack in your first question. It appears to us that the range boiler, which is heated by the 4 oil burners and in which the steam is generated will boil empty and that the other tank containing the water over the perforated coil will hold its water. We do not think that there will be much, if any, loss of water from this tank. Probably you will find that its volume of water will increase by the condensation of the steam in it.

Just how long it will take for the boiler to boil empty depends on the strength of the burners. If a steam pressure of 20 pounds is held up in the gauge and the ⅜-inch valve is wide open, and there is little obstruction to the steam at the coil perforations, we estimate that the boiler can be boiled dry somewhere between 2 and 3 hours after the time that the steam pressure reaches 20 pounds.

Regarding the proposed water works system for the party who lives in the country and has a dirty cistern with no plumbing, we suggest a layout similar to Fig. 2. This embraces a regular pneumatic tank and automatic electric pump equipment such as you may see advertised frequently in "Domestic Engineering." In addition, however, is a filter on the rain water lines to cistern. This is a brick or cement concrete filter. The rain water falls into a sediment chamber first. There it deposits all large solids. The water then

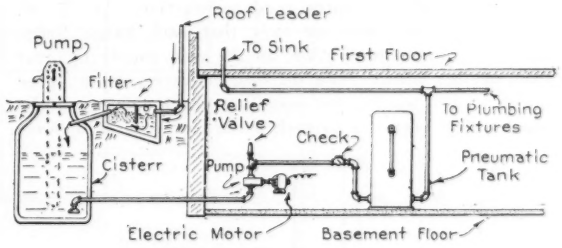


Fig. 2.

flows up through a sand filter bed and overflows into the cistern after being thus filtered.

We think it is a good idea to have a chain pump with cup buckets over the cistern to draw water at times. This will aerate the water automatically as the pump is used. We advise you to study the layout in Fig. 2 and see if it does not fit into your case better than the scheme you suggested.

INTERESTING PROBLEM OF HOT WATER SUPPLY TO THREE SEPARATELY METERED APARTMENTS.

Editor, "Domestic Engineering":—Fig. 1 is a sketch of some work on which I was called to make some repairs. Some people will say it will not work, but this job has been working well for 26 years. Only once did it start to circulate through the cold water pipe. Then I put a check on the cold water at the heating boiler as shown on sketch, and it has worked ever since. I do not know who did it, but have been trying to find out. He was a genius in his

own mind all right. If he had put check valves on runs to boiler, and also stop valves, each house could be shut off separately. What do you think of it?

The sketch shows three flats with separate meters for each. All range boilers are heated from a coil in the fire

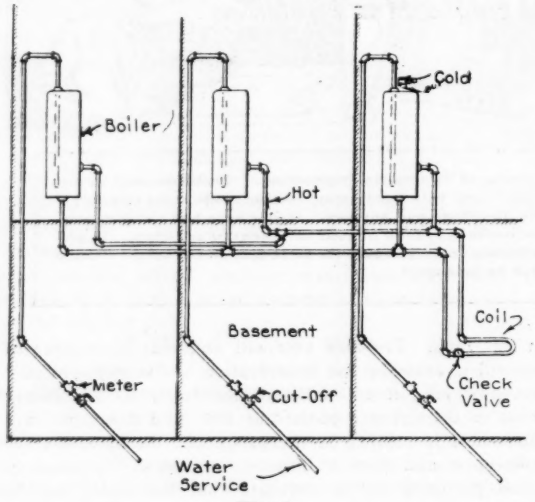


Fig. 1.

box boiler. What I tried to figure out was whether each tenant was paying for what he used, or for somebody else's. If any repairs were made, all three meters must be shut off. I claim check valves should be put in both hot and cold range connections. Also stop cock on each supply, so when meter and range stops are closed the water would be shut off.

Nebraska. W. T. H.

The sketch submitted by this correspondent is certainly an interesting one, showing how crudely work can be done at times, and still give fairly good satisfaction. W. T. H. is certainly correct when he says that each range boiler should have a separate shut-off on the cold supply up near the top of the boiler. We do not, however, quite agree with him in his scheme for installing check valves on the flow and return branches to each boiler, for several reasons.

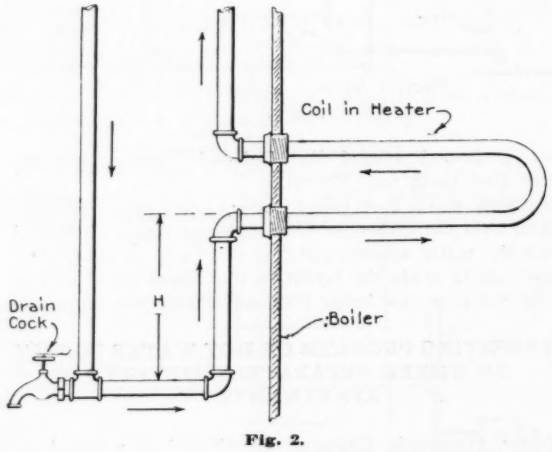


Fig. 2.

The first is that check valves in the return pipes from bottom of boiler will not prevent the trouble he has experienced in shutting off the water. Secondly, on general principles we do not like the idea of having check valves in circulation piping. However, we would like to hear from some of our practical readers on this point.

We do not approve of the check valve which W. T. H. places at the coil, unless it be an exceedingly light check that cannot materially retard circulation. He could have accomplished the same results by dropping the connection to the coil just outside the heater substantially as shown in Fig. 2.

The drop at H is enough to prevent the coil from circulating the wrong way. We are sure that W. T. H., who is a thoroughly experienced plumbing contractor, has very good reasons of his own for suggesting the aforesaid check-valves. The fact that we disagree with him on that particular point is no proof that he is wrong.

We would like to hear what some of our readers have to say concerning this question.

READER SUGGESTS IMPROVEMENT FOR SIPHONING WATER FROM ARTESIAN WELL.

Editor, "Domestic Engineering":—On page 402 of your November 26th issue, there is a query as to siphoning of water. Your answer is interesting from a technical point of view, but there are other things to consider in this case. I take it that what your correspondent calls an "intermediate" valve is a vertical check valve in the well line, if that is the case it is all right.

Length of pump line from main to pump is not given, but it is "dollars to doughnuts" that a pump in this position will not start siphonage in this line for the reason that vacuum pull in the 850 ft. of pipe will be greater than that in 100 ft. of 1½-inch pipe, necessary to get water to pump. This 850 ft. therefore will not be entirely cleared of air, and when pump is stopped, this air will get to top of line and stop the siphon.

The pump to work properly should be below the dynamic line on the long line, and even then I am doubtful whether the pump would continue pumping (without heavy pounding of valves) long enough to entirely clear line of air, sufficient to allow siphonage. My suggestion, resulting from experience of many years, would be to place a tee at top of riser in well, and put in a piece of pipe as long as possible with removable cap, and fill the line from the bottom with force pump, replacing cap with air tight joint. Then open the lowest valve on line first and let water run.

All branches should be taken from the top of the line and if possible graded up to outlets to avoid any possibility of air getting back into the line. This arrangement presupposes, of course, that all outlets are far enough below level of water to induce suction and that the water line in well is not too far from the horizontal line at the top, and that the line is air tight.

Massachusetts. G. A. C.

Correspondent takes a very practical view of the question referred to, and we are sure that his suggestions will appeal to A. B. G., of New Hampshire, with reference to his query on page 402 in the November 26th issue of "Domestic Engineering." The plan suggested by G. A. C. for driving all air out of the long line by the application of a force pump at its base and a removable cap at the top of the well pipe is a very good one for priming the pipe line.

It will no doubt save a great deal of pumping and annoyance in starting up the job. Of course, it does not, in any way, assure the maintenance of the siphon. That must entirely depend upon the pipe line being absolutely air tight above the level of the dynamic line as shown in Fig. 2, page 403 of the November 26th issue.

This is a very interesting instructive problem, that is worthy of study by our practical readers, and we will be glad to receive further comments on it and give space to any new suggestions.

ONE DOLLAR *a* YEAR *for* INVENTORY

Suggestions and Forms for Making a Hard Job Easy

By Geo. R. Doyle,

Accounting Service Dept., The National Trade Extension Bureau.

THE Trade Extension Bureau presents in this article suggestions that will greatly lighten the work of taking inventory, and also a form that will systematize the recording of it. This inventory sheet and the index that goes with it will standardize the listing of the items, and will save the rewriting of the names each year.

The present Income Tax regulations advise every taxpayer to have a complete record of inventory that can be referred to by the examiner when he calls to check up the return. This alone is sufficient reason for doing this thing right. In addition, however, the inventory record is usually the principal factor in determining whether or not a profit has been made. This amount in the balance sheet is the most important, if not the largest item of quick or current assets. It is what the banker looks to as protection on any loan he makes. From every angle, therefore, it is an important matter; too little attention, and too much guess work have been given it. Like doing everything else right it must be started right, in order to come out right in the end.

This article naturally divides itself into two sections, taking inventory and recording inventory. Each will be dealt with separately and explained in this article.

Taking Inventory.

Too little attention is paid to getting a record of the quantity of each item in stock. It is true that there are a great many items to be listed, but this is only another reason why some thought should be given in advance to the details. The general practice is to stop everything for a week during the last of December, and have everybody count and list the different items, one calling, and another listing. These lists are then turned into the office to be priced and extended. Too often the writing is illegible, space has not been left for prices and extensions, items are mixed up indiscriminately, so that it is impossible to classify the totals, and the count is incorrect on the face of it. In fact, it is a most unsatisfactory result all the way through. All this can be remedied by a little planning, and it is to offer some suggestions on this planning that this article is written.

First of all, have about 500 or 1,000 cards printed on cheap Manilla tag stock, similar to Fig. 1. These cards should be 3x5 inches.

By the use of these cards inventory taking can be started two or three weeks in advance of the date of closing the books.

First number the cards consecutively; this can be easily done with a numbering machine, or the printer can do it when printing them. By having every card that is spoiled or not used returned you will be sure that every one is accounted for, and thereby guard against omitting any item from the inventory record.

Select a few of the responsible employees to do the counting. These may be journeymen or helpers, if they can be depended on. If a stockman is employed he should have charge of this end of the work.

INVENTORY CARD ~

DATE ____ PLACE ____ SLIP NO. ____

ARTICLE	SIZE	QUANTITY IN STOCK	QUANTITY SOLD AFTER COUNT	QUANTITY IN INVENTORY	COST

COUNTED IN ____ WEIGHED IN ____

TAKEN BY ____ CHECKED BY ____

Fig. 1.

Give each one who is going to do the counting a bunch of cards, and as they count each bin, box or pile have them fill out a card. Write the name of the article and size in proper places, and the quantity counted in the column "Quantity in Stock." The card is then placed in the bin or box.

If a bin has more than one article in it, each article can be entered on the same card. A check mark in the space provided at the bottom indicates whether the quantity was arrived at by weight or count.

The initials of the person taking the stock should appear opposite "Taken By." Where it is desired to have the count checked by another, that person's initials should appear opposite "Checked By."

After the count has been made, and a card left in the bin, no goods should be taken out without marking, on the card under "Quantity Sold After Count," the number taken out. Positive instructions should be given regarding this. By the use of this method your quantities are absolutely correct, as on the date of closing your books.

After the stock has been taken, the cards are gathered up, put in numerical order to see that none is missing and turned over to the bookkeeper for pricing and recording.

Recording Inventory.

The object of the sheet illustrated under Fig. 2 is to have an inventory record that will allow comparisons one year with another, that will be arranged so systematically that any item can be located with the least amount of trouble, and also save the rewriting of the names each year.

The sheet is provided with columns sufficient to last for three years. With each set of sheets is furnished fifteen division sheets, and tabs marked as follows:

Pipe & Fittings,
C. I. Traps, Water Meters, Etc.,
Lead Goods,
Valves and Gauges,
Water Closets, Urinals,
* * *
Bath Tubs, Showers,
Lavatories, Drinking Fountains,
Sinks, Laundry Trays,
Brass & N. P. Goods,
Rubber Goods, Packing,
* * *
Tank Heaters, Range Boilers,
Pumps, Water Systems,
Specialties,
Radiators, Attachments.
* * *

dividing up the cards. Using a Price Guide will lighten this job of pricing, because the sheets can be taken out of the binder, and be passed out with the corresponding cards to those doing the pricing. Where the inventory is priced from a Price Guide the proper discount is to be deducted from the total of each section. Where several persons do the pricing, care must be taken to see that no cards are lost or mislaid. They should be kept in numerical order, as far as possible, and after all have been priced, they should be again arranged in numerical order, and rechecked to see that none are missing.

In entering the items on the inventory sheets, first sort the cards according to the fifteen divisions noted above. Then enter each item shown on the card, according to the instructions in the previous paragraph.

Where it is not desired to use the card illustrated in Fig. 1, stock can be listed either on separate sheets, and copied onto the inventory sheets, or can be listed direct on the inventory sheets. In doing this it will be found that a

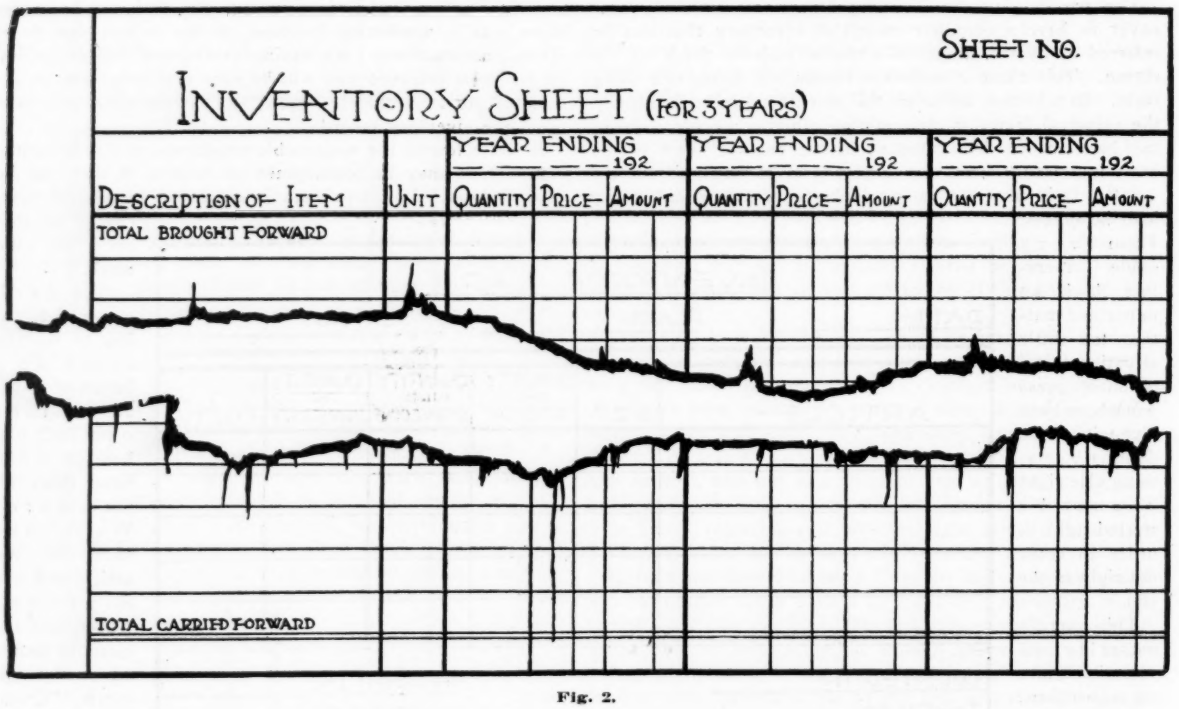


Fig. 2.

Each division sheet contains a list of the items to be included in the respective section.

Looking at the illustration of Fig. 2 we see that the first column provides for a description of the article. The second column "Unit" is to describe how the article is priced, whether by the pound, dozen, each or otherwise. These two columns are to be written in only once for three years. The remaining columns are in three sections, a section for each year. They cover the information that changes each year. First "Quantity," next "Price," and last "Amount."

There are two ways of handling these sheets; in connection with the card illustrated over Fig. 1, which we will describe first; or without the use of the cards in Fig. 1.

At the time for actually recording the inventory after the cards have all been filled out as explained above, they are given to the bookkeeper. He can put the prices of the articles on the cards first, and copy them on the sheet afterwards when copying the name and quantity; or he can do the copying first, and put the prices on the sheets later. By the former method several people can do the pricing by great deal of trouble will be saved if the inventory is taken in the order of the fifteen divisions shown. That is, for example, putting all items under the first section "Pipe and Fittings" together, and not mixing in with them items belonging in some of the other sections. Do the same with each of the other sections. This only means using a little time planning the work in advance, which will be made up many times over at the end.

These inventory sheets will be sold in sets consisting of two pads of 50 sheets each, one set of fifteen division sheets with tabs attached and a binder. The pads of fifty sheets will also be sold separately. These sheets are ruled on both sides, and each sheet contains sixty lines, so that a set provides for six thousand items, which will take care of the inventory in the average shop. In some of the sections, of course, an entire sheet may not be needed. The price of a complete set will be $3.00 and single pads of fifty sheets 30 cents each.

We urge that orders be sent in promptly so that everything will be in readiness when inventory time arrives.

SECRETS ARE NO LONGER SECRETS

EDITOR'S NOTE:—By using one of these Editorials each week in your newspaper advertising you will help to educate your community in the true facts of plumbing and heating merchandising. Such education will create good will and build your business. The more the public knows the better your service will be appreciated. Take one Editorial a week and reprint it in the upper left corner of your regular advertising space. Have it set in bold-faced type, with rule or border around it, as indicated on this page. This will cause the Editorial to stand out and make it easy to read. The use of these Editorials from week to week will not add a dollar to your advertising expense, but they will help along sales.

THE plumbing and heating trade is out of its swaddling clothes. It is no longer an infant. It has grown large and strong. All down the years the main thought was the development of the mechanical—the scientific side—the perfection of water supply, radiation and ventilation. And that was as it should be. The perfection of the mechanics of the trade has given plumbing and heating a Gibraltar-like foundation—a foundation that will stand the test of any strain.

So far, so good. But now comes something else. We have reached the merchandising stage. The advertising and selling ends must be developed. This does not mean less thought applied to the mechanical, but more thought applied to the business side. And to build the business side every man in the industry should lend a hand. All should come forward with their experiences—tell what they have done, what they are doing—and help the growth of the merchandising idea. In doing this one need not be afraid of giving away "trade secrets," whatever they are. There are very few business secrets that are any longer secret.

Those who were fortunate enough to hear Judge Karel, of Milwaukee, at the convention of the Wisconsin Master Plumbers' Association, last month, will not soon forget his words about so-called secrets in business. His plea was for an exchange of ideas and experiences. Such an exchange will make plumbing and heating grow—will add success, prosperity, happiness to the entire trade. He pointed to other professions. When a doctor or a dentist tries out a new idea, and it works, he immediately gives it to the medical or dental world. This exchange has developed medicine and dentistry and put these professions where they are.

The plumbing and heating trade can do the same. After you have tried out a special campaign, or made a particularly good window display, or hit upon a good line of advertising, or used some resultful selling ideas, send the details to "Domestic Engineering." Let it be the exchange. It will pass your efforts on to others, and the efforts of others on to you. Thus every man will help every other man, and, with every man helped, the entire trade will be helped. That is the way to develop merchandising, and from this time forward the largest returns in dollars and cents are to come through the use of merchandising ideas.

And this brings us to the Advertising Editorials. It is the hope of "Domestic Engineering" that this series, before it reaches its end, will cover every point that should be explained to the public. To do this—to touch all the points and all the angles of all the points—master plumbers everywhere are invited to suggest subjects. Send in as many subjects as you can. Let us do a good job with these Advertising Editorials while we are doing it. If we take up every point, and then explain in such a way that the public can understand, the road is paved for successful merchandising. Help the public to know. That is the first step toward increased sales.

The little Editorials are being used by live advertisers in the trade. And the Editorials are producing results.

"Domestic Engineering" receives many letters like this one from Alfred A. Dorsey, of Wilmington, Delaware: "I think the Advertising Editorials hit the spot, as I have had more comments on them than on any advertising used before. 'Why He Goes Back' (printed in 'Domestic Engineering' for December 24) got the whole city talking, which was just what I wanted."

The few words from Mr. Dorsey's letter are not printed for self-glorification, but as a means of showing other master plumbers what may be accomplished. To get a whole city talking, or to cause even a few people to talk, is enough to make the use of the Advertising Editorials worth while.

The public is woefully ignorant regarding the fine business points of plumbing and heating. This has been said before. It will be said again. It can't be said too often. And nobody is ever going to take the trouble to educate an ignorant public except those whose business it is to educate it. So, send in your suggestions for Editorials.

A Series—No. 12.

JUST A LITTLE LEAK.

A CUSTOMER 'phoned to send a man right away to fix a leak in the bathroom. We asked what sort of a leak it was, what caused it, where it was located? But about all the information we got was, "O, it's just a little leak." And that's all it was—ten minutes actual work—taking out an old faucet and putting in a new one.

When we sent a bill for five dollars this customer of ours nearly exploded. "What!" he shouted, "five dollars for a faucet and ten minutes work?"

"No, no," we said, the faucet and the work amount to very little. The rest of the bill is for time. You would not tell us anything about the job, so our repair man had to go to your home and find the leak; then he had to make a trip back to the shop to get the right faucet; then he had to return to your home and put the faucet in its place. If, when you 'phoned, you had said that you had a wornout faucet that was leaking, the expense of the trip back to the shop would have been saved."

You can't take your plumbing repairs to your plumber, as you take your teeth to your dentist or your shoes to your cobbler—no, you can't—but when you need him you can tell him as near as possible what the trouble is. And that will save time, which saves money.

We are just as anxious to save for our customers as they are to have us save.

ILLINOIS MASTER PLUMBERS' ANNUAL CONVENTION

Many Vital Trade Matters Discussed at Thirtieth Annual Convention in Champaign, Ill., January 24, 25 and 26. John J. Cahill, Evanston, Elected President

CHAMPAIGN, ILLINOIS, was the Mecca for two hundred or more master plumbers and their friends on January 24th, 25th and 26th when members of the trade from all parts of the state gathered there for the thirtieth annual convention of the Illinois Master Plumbers' Association.

Tuesday Morning Session.

The convention was opened Tuesday morning, January 24th, in the Banquet Hall of the Masonic Temple. Rev. Herbert A. Keck pronounced the invocation. C. D. Brownell, past president of the Illinois Master Plumbers' Association, welcomed the delegates on behalf of the Champaign and Urbana local association.

Following Mr. Brownell's welcoming address, a song of welcome was sung by a quartet representing Champaign and Urbana. Rev. W. E. Roberts, president of the Champaign Chamber of Commerce, also welcomed the delegates on behalf of that organization. Rev. Roberts spoke forcibly on the necessity of organization and stressed the fact that "the prosperity of one is the prosperity of the other, and the poverty of one is the poverty of the other." He also touched on the need of unison in industry, and pointed out that employees would be much better off if they would listen to their employer, and reason with him.

E. C. Wagner, Chas. A. Dreier, Secretary of National Association of Master Plumbers, and P. R. Jacoby, All from Chicago.

Another address of welcome, this time from the University of Illinois, was delivered by Prof. James M. White. Prof. White told of the many things the university is doing to help industry.

He told of the help which is being given the farmers of the state, and how the university can be used in helping other business men. "There are five important things," he said, "which the University of Illinois is doing to help the farmer and the business man. The first is the increasing of the fertility of the soil. There is now being created a system of agriculture which will maintain the fertility of the soil, enabling us to be more sure of how properly to farm the land.

"The second is the control of pests. The university has had under observation the many pests which infest the farm lands of the state, and has been very beneficial to the farmers in telling them how to prevent or exterminate those insects.

"The third deals with the conservation of the materials of construction. All classes of construction material have been brought in for analysis, and those investigating this material hope soon to find a factor of safety for building material.

"The fourth has to do with the control of communicable diseases. At the university's laboratory in Chicago many communicable diseases are being studied with the hope that eventually there can be a healthier state, nation, and world.

"And the fifth important thing the university is doing is to make men and animals producers instead of charges."

William J. Johnston, Bloomington, president of the association, responded to the addresses in his usual able manner and appointed R. Johnson, of Champaign, and R. Miner, of Urbana, to act as sergeants-at-arms.

The following committees were then appointed:

Credentials: D. A. Murphy, Canton; F. Rimmers, Joliet; A. S. Kincaid, Pekin.

Resolution: Geo. Parks, Winnetka; J. P. Lowry, Bloomington; C. C. Myers, Rock Island; Walter J. Blythe, Chicago; Theodore Becker, Geneseo.

Memorial: P. M. Murphy, Chicago; F. Flader, Evanston; I. A. Lederer, Bloomington.

Secretary W. C. Haviland, Aurora, then read several communications, among which was an amendment to the association's constitution and by-laws, submitted by the Canton local and a resolution by the Champaign and Urbana local. The proposed amendment reads as follows:

"Amendment to the Constitution, Article 5: Any master plumber qualifying in the State or National Association shall be eligible to and should become a member of this association and make application to the nearest local of which he should become a member."

The question of presenting testimonials or awards of merit was then brought up by C. W. Alcock, of Chicago. Mr. Alcock contended that such awards be made at the convention instead of several months afterwards as has been the case in several instances. He also suggested that these awards be made every year regardless of re-election, but the Resolutions Committee, which reported on this subject, did not concur in his contentions, as will be noted in the reports of that committee.

Tuesday Afternoon.

Tuesday afternoon was devoted to an inspection trip to the University of Illinois. Here the delegates saw the work the university is doing for the plumbing profession, and other industries. A trip was also made to the university's greenhouses, and the heating plant inspected, while the university museum and art gallery were another source of beneficial entertainment.

An informal party and dance was held Tuesday evening, at which everybody had a round of real enjoyment.

Wednesday Morning Session.

The Wednesday morning session was opened with an address on the "Venting and Capacities of Soil Stacks," by Prof. H. E. Babbitt, of the University of Illinois. Prof. Babbitt has been making tests of soil stacks, but has not come to any definite conclusions on the subject as his tests are not yet completed. Stereopticon slides were used to illustrate his talk, and by the use of one of these he showed how he was able to maintain a seal in the trap without its being vented.

This work will be continued by the professor, and since his work has come to the attention of the master plumbers of the state the association, according to statements made by many of those present, is going to get behind the movement to see what improvements can be made in the installation of plumbing fixtures. The association has also gone on record as being in favor of voluntarily contributing money to the support of the plumbing research department of the university, which will include the purchase of equipment necessary to make further tests, and to help in every way the successful conclusion of such tests. Through these tests, and with the support of the master plumbers of the state, it is hoped that some interesting improvements in plumbing work may be unearthed and given out to the plumbing industry.

Prof. Babbitt's talk was well received, and he was urged to keep up the good work.

The next order of business was the reports of standing committees.

The Resolutions Committee's Report.

In presenting its report the Resolutions Committee stated that it did not agree in principle with the suggestion of presenting testimonials to all retiring officers. Testimonials, the committee held, are a result of spontaneous appreciation of services rendered and they cannot be provided for by any law.

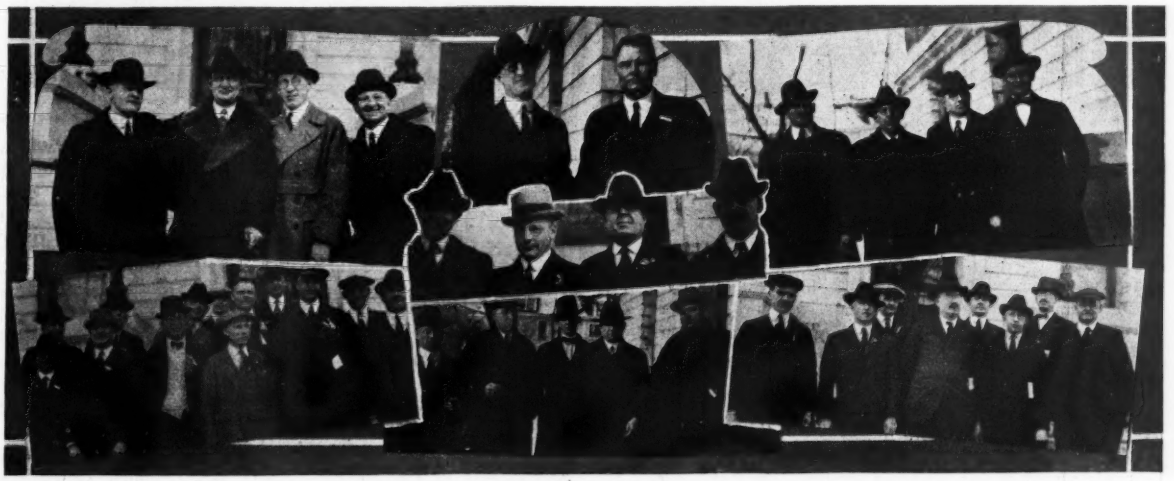
The committee recommended that the state president appoint a committee of three to devise ways and means for the establishment of a school for apprentices, and that this committee take up the matter of the apprentice school with the faculty of the University of Illinois.

It presented the amendment to Article 5, Section 1, of the Constitution and By-laws as proposed by the Canton Association.

The Legislative Committee's Report.

The Legislative Committee reported that it had drawn up a proposed amendment to the state plumbing law and that copies of the same had been submitted to all members of the State Legislative Committee. The bill as drawn up defined: Plumbing, master plumber and journeyman plumber. It contained provision for the issuance or revoking of plumbing certificates. It provided for the compulsory passing by cities and towns in the state of sanitary plumbing and plumbing inspection laws.

The bill was not presented to the legislature, the committee reports, because of the fact that it was necessary that it spend all of its time opposing the passing of the Trice Bill, proposed March 23d, which was designed to supplant the present state plumbing law so far as it applied to cities of 3,500 or under, giving the Department of Registration and Education control over examining boards and examinations.



At the Illinois Master Plumbers' Convention.—From Left to Right in Top Row They Are: Wm. J. Johnston, Bloomington, Ill., Retiring President of Illinois Master Plumbers' Association; Jos. W. Cannon, Chicago, President of the National Association of Master Plumbers; W. J. Woolley, Evansville, Ind., Secretary-Manager of the National Trade Extension Bureau, and J. C. Greenberg, also of the National Trade Extension Bureau; E. J. Benning, Chicago, and C. D. Brownell, of Champaign, both Past-Presidents of the Illinois Master Plumbers' Association; A. Moser, M. J. Johnson, F. R. Bailey and E. O. Bergren, All of Rockford, Ill. Center Group: H. E. Culp, William Crowley, T. F. Flannigan and M. S. Hitchcock, All of Peoria. Bottom Pictures: The Delegation from Champaign and Urbana; Clarence Ruddy, E. J. Farrell, D. H. Richmond, A. J. Herbert and F. J. Ruddy, All of Aurora, Ill. Front Row: E. W. Orr, C. F. Burow, W. H. Carson, F. G. Greiser, G. E. Carson, All of Danville, Ill. Back Row: J. N. Basinger, E. A. Mahoney and E. J. Ryan, All of Danville, Ill.

The Legislative Committee was successful in its opposition to the measure to the extent that it was tabled in committee and not taken up again during the session.

The committee recommended that the Legislative Committee be composed of one member from each senatorial district throughout the state, the active committee to be composed of three members selected by the president of the association.

Future Legislative Committees and the membership in general were warned to be on their guard against inimical measures that are constantly cropping up in the state legislature.

The Organization Committee's Report.

The Organization Committee reported that in accordance with the suggestions made at the last convention, the Board of Directors decided to hold zone meetings throughout the state with the object in view of increasing the membership in the state association.

In the opinion of the committee the meetings had not been successful as far as arousing interest among non-members was concerned, although the members turned out well in almost every instance. It was felt that members them-

selves were responsible for this condition and the chairman of the committee urged that if the zone meetings are to be repeated that every member consider it his duty to see that non-members attend.

Wednesday Afternoon Session.

The Wednesday afternoon session was opened with the

Chas. F. Taffe and P. M. Murphy, Both from Chicago.

reports of the Secretary and Treasurer, which showed the association in good financial standing, President Johnston in his report summed up briefly the activities of the association during the past year, and made recommendations and suggestions for the well being of the organization in the year that lies ahead. He touched on the necessity of the master plumbers familiarizing themselves with the state laws in regard to plumbing and then seeing that they are properly enforced. He took occasion to commend the work of the National Trade Extension Bureau and urged that its good work be heartily supported by the entire trade.

Mr. Johnston is greatly in favor of the zone meetings which were started last year, and he feels that they should be made a part of the program for this year's activities.

On the whole, the retiring president expressed himself pleased with the work of the association for the past year and gratified by the support and co-operation of the various

Mr. and Mrs. G. A. Kerney and Mrs. and Mr. M. L. O'Malia, All of Evanston, Ill.

officers, committees and laymen who have untiringly assisted in the work of building a bigger and better state asociation.

Following the reading of these reports, J. C. Greenberg, field representative of the National Trade Extension Bureau, was given the floor, and talked on the subject of trade extension. Mr. Greenberg in his able manner pointed out to the members present the necessity of a good location, a good window display, and a good showroom display. He also brought out the fact that if a plumbing business is to be conducted in a really business-like manner the master plumber should know his overhead.

William J. Woolley, secretary-manager of the Bureau, took the floor after Mr. Greenberg had finished and told the delegates just what the Bureau has accomplished and what it expects to accomplish during this year. He told how the Bureau was formed, who supported it, and what

G. A. Larson, C. W. Alcock and B. L. Lyman, All of Chicago.

was expected of it. He also told of a new department which the Bureau has recently included in its make-up, this being the Publicity Department in charge of a competent publicity man who will prepare advertising and other material which can be furnished to local newspapers for publication.

Wednesday Evening Entertainment.

Wednesday evening the members and guests were entertained at a dance given in the ball room of the Masonic Temple. This dance was even better than the dance held the night before. J. L. Robertson of Mason City added to the zest of the party with his vocal selections. During the dance Mr. Robertson wended his way through the crowd and loudly and enthusiastically sang the refrains of several well known songs. Another feature of the dance was the revival of the old time circle dance, which afforded a round of enjoyment for the old as well as the young.

Thursday Morning Session.

Prof. G. C. Habermeyer was the first speaker to be heard

W. D. Shafer and Wm. Crowley, Both of Peora, and A. S. Kincaid, of Pekin, Ill.

at the opening session Thursday. His subject was "Some Problems of Sewage Disposal." Like Professor Babbitt, he told of the work which the University of Illinois is doing to protect the lives of people by the installation of sanitary sewage disposal systems. Prof. Habermeyer has spent considerable time on the subject and has designed and installed several systems at the University grounds for experiment purposes. There have not been many changes in types of systems during the past ten years, he said, but it is hoped the University can develop a very practical and efficient apparatus in the near future.

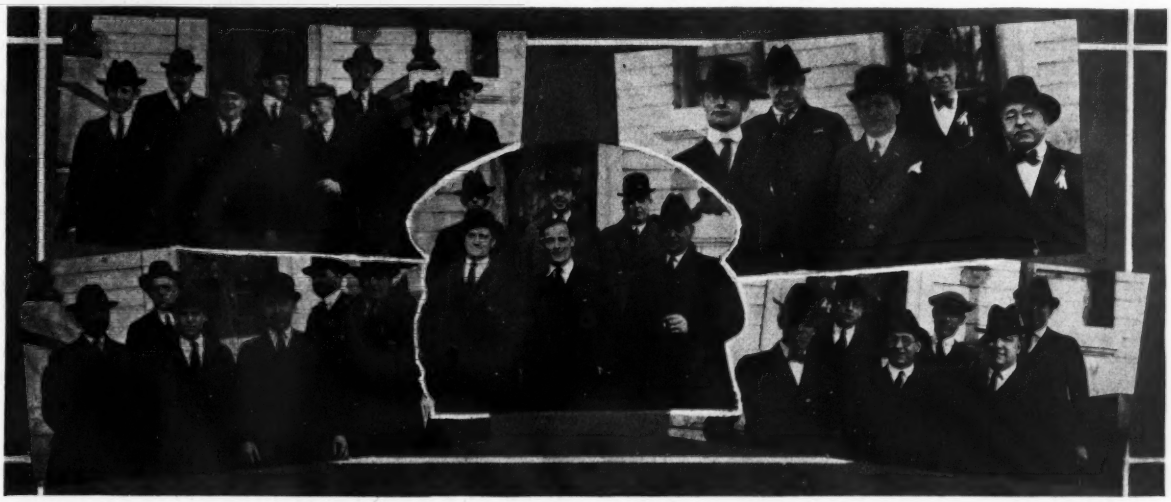
Following this, Olin Mason Caward, a well known orator, spoke on a subject vitally interesting to everybody. "The Shot in the Arm or Business Enthusiasm." Mr. Caward, a former army captain, injected into his audience a shot of business enthusiasm that will long be remembered.

In the words of Mr. Caward, his talk may be summarized as follows:

"It is not the old-fashioned kind that the Harrison Anti-Narcotic Act made illegal, nor yet the crooked elbow kind which was so popular before the Eighteenth Amendment shut off the high power on the 'third rail.' It is a new, up-to-date kind, the ingredients of which every man has in his own makeup. It's a sure cure for the personal individual blues in the present business situation."

came from different sections of country instead of from one locality, which showed, he said, that everybody was working to help the organization. He also told of the Apprenticeship department recently organized by the National Trade Extension Bureau. There was a decrease in apprentices last decade, he said, and pointed out that there were eight times as many carpenters as plumbers in this country, a condition which should be rectified. The number of journeymen is also on the decrease, he said.

Thomas F. Hanley, of Chicago, recently appointed to the sub-committee on Plumbing formed by Secretary of Commerce Hoover, spoke a few words on the advance made in plumbing and what the sub-committee expects to do in the way of standardizing plumbing materials.



Salesmen at the Illinois Master Plumbers' Convention.—From Left to Right in Top Row They Are: H. S. Pettengill, Northern Illinois Representative, Duro Pump & Mfg. Co., Dayton, O.; H. E. Heygler, Economy Scale Remover Co., Chicago Heights, Ill.; J. F. Dare, Central Illinois Representative, Duro Pump & Mfg. Co., Dayton, O.; V. M. Gaspar, Borden Co., Warren, O.; L. R. Mendelson, Hotstream Heater Co., Cleveland, O.; "Sy" Martin, H. P. Martin & Sons, Owensboro, Ky.; Geo. B. Barron, Compound Injector & Specialty Co., Chicago; E. C. Hansen, Economy Scale Remover Co., Chicago Heights, Ill.; W. A. Shorb, Vice-President, Decatur Pump Co., Decatur, Ill.; W. H. Downey, Plumbing Inspector, Bloomington, Ill.; Geo. J. Dehn, President and General Manager, Compound Injector & Specialty Co., Chicago; T. M. Parker, Detroit Range Boiler & Steel Barrel Co., Detroit, Mich.; I. Herzburn, President and Manager, Apex Brass Mfg. Co., Cleveland, O. In Center: Front Row: J. C. Jamieson, Geo. J. Roberts Co., Dayton, O.; M. I. Weil, Chicago Pump Co., Chicago; Geo. J. Leibold, Humphrey Co., Kalamazoo, Mich. Back Row: P. L. Bean and Geo. W. White, both of H. Mueller Mfg. Co., Decatur, Ill.; A. Gleason Bishop, Fort Wayne Engineering & Manufacturing Co., Fort Wayne, Ind. Bottom Pictures: Front Row: E. H. Platz, District Manager, The Duriron Co., Inc., Dayton, O.; Geo. H. Eggers, Manager of the Geo. H. Eggers Co., of Chicago; J. M. Griffen and District Manager C. N. Stedman, both of the Fulton Co., Knoxville, Tenn.; J. R. Rohler, District Manager, Milwaukee Air Power Pump Co., Milwaukee, Wis.; W. J. Lantz, Western Sales Manager, Duro Pump & Mfg. Co., Dayton, O. Front Row: C. B. Irish and C. L. Cook, both of the Lender Iron Wks., Decatur, Ill.; R. L. "Dick" Moore, of H. Mueller Mfg. Co., Decatur, Ill. Back Row: W. T. Wheat and W. L. Waddell, both of Decatur Pump Co., Decatur Ill., and W. F. Blake, Pittsburg Water Heater Co., Pittsburgh, Pa.

And it was all of that and some more, too. All through the two hours which constituted the length of time taken for the subject there was not a man who did not swallow every word of it.

Five things were pointed out by Mr. Caward as being the main constituent of a successful business man.

The first was the need of will power, the second, health, the third, strength, the fourth, the art of self abandonment, and the fifth, the smile.

Mr. Caward's speech was accompanied by many gestures that augmented his forceful delivery and carried his message of enthusiasm and optimism home with great force. His talk was received with a burst of applause that left no doubt as to the interest and appreciation of his audience.

Thursday Afternoon Session.

Joseph W. Cannon, President of the National Association of Master Plumbers, spoke at length on the work of the national body, and the Trade Extension Bureau. He reported a substantial growth in the ranks of the parent association and was very much elated over the fact that this growth

Election of Officers.

The election of officers was then held, and resulted as follows:

President: John J. Cahill, Evanston.
First Vice-President: W. G. Bergner, Granite City.
Second Vice-President: Fred R. Bailey, Rockford.
Treasurer: J. F. Manion, Freeport, re-elected.
Delegate at Large: W. J. Johnston, Bloomington.
Alternate Delegate at Large: Fred A. Finder, Champaign.

Convention Notes.

Mr. Cannon announced that Detroit was near Canada. He mentioned the latter place so quietly that those in the back of the room could not hear him. However, they were good at lip movements and so they had a good laugh.

The Illinois Master Plumbers' Association should be congratulated on the fact that it is not afraid to break precedents,—the ladies were in attendance and they certainly enjoyed themselves. A special program was arranged for them and it was carried out to the letter.

Bath-a-Day Balloons were floating in the air,

Bath-a-Day literature was spread on every chair.

The educational committee commended the campaign and urged that the good work be kept up.

Plumbers are said to be as essential as doctors, but they can't get the blanks.

"Pump, Willie, Pump," says Mr. Greenberg, would make a good epigram to have printed on every piece of literature in the trade. If you haven't heard the story of Willie and the Organ go to the next state convention, it's almost sure to appear, and it's worth hearing.

"If the wife starts crying, walk away and leave her," advises Mr. Caward. "That's her way of swearing at you."

Exhibitors at the Convention.

Several manufacturers again this year displayed their products in specially arranged booths in the convention hall. Among these were the following:

Dayton Pump & Mfg. Co., of Dayton, Ohio, showed a pump. George E. Weir, district sales manager from Chicago, and J. G. Doty, district manager from St. Louis, were on hand to explain its merits.

The Fulton Company, of Knoxville, Tenn., had a full line of "Sylphon" products on display in its booth. J. M. Griffin, Chicago representative, and C. N. Stedman, district sales manager, were in charge of the display.

E. Hesselscheidt, of Champaign, and F. W. Riedel, of Decatur, Ill.

The Decatur Pump Co., of Decatur, Ill., attracted considerable attention with its display of two new style pumps under pressure. W. T. Wheat, W. L. Waddell, sales manager, and W. A. Shorb, vice-president of the company, explained the details of the working parts of these pumps.

The Duriron Company, Inc., of Dayton, Ohio, had an interesting display showing the acid test of its goods. E. H. Platz, Jr., district manager of Chicago office, was in charge.

The Apex Brass Mfg. Co., of Cleveland, and the Inland Supply Company, of Danville, showed a booth in which they displayed plumbers' brass goods. I. Herzbrun, president and manager of Apex Brass Mfg. Co., and W. W. Weaver, and A. W. Hadley, of the Inland Supply Co., were in charge.

The Milwaukee Air Power Pump Co., of Milwaukee, Wis., displayed two pumps under pressure. J. H. Rohler was in charge.

Geo. H. Eggers Co., of Chicago, had several automatic gas water heaters on display. Mr. Eggers was in charge of the booth.

Bastian-Morley Co., of La Porte, Ind., had two of its automatic storage gas water heaters on display. H. E. Maxfield, district manager, and R. Dotson, were in charge of the display.

The Geo. J. Roberts Co., of Dayton, displayed two water systems in charge of John C. Jamieson.

The Ft. Wayne Engineering & Mfg. Co. displayed two "Paul" water systems under pressure. A. Gleason Bishop was in charge of the exhibit.

The Humphrey Co., of Kalamazoo, Mich., was represented by Geo. J. Leibold, who had charge of its display of four automatic gas water heaters.

Biggs Pump & Supply Co., of La Fayette, Ind., occupied a booth, but had no goods on display. C. B. McHaley represented the company.

The Chicago Pump Co., of Chicago, had a novel display. Maurice I. Weil was in charge, and showed large photographs and drawings of the company's goods.

The Duro Pump & Mfg. Co., of Dayton, O., had an attractive display of several types of pumps under pressure. W. J. Lantz, western sales manager, J. F. Dare, and H. S. Pettengill were in charge of the booth.

The Economy Scale Remover Co., of Chicago Heights, Ill., demonstrated use of its boiler seal and showed it in the different stages of manufacture from raw material to the finished product. E. C. Hansen and H. E. Heyder were in charge of the display.

The Compound Injector & Specialty Co., of Chicago, displayed many cast iron specialties. Geo. B. Barron and Geo. J. Dehn, president and general manager, were on hand at the booth, meeting their many friends and explaining the details of the exhibit.

H. P. Martin & Sons, Owensboro, Ky., displayed their portable vise stand and pipe bender. C. F. "Sy" Martin, sales manager, was in charge of the booth.

The Hotstream Heater Co., of Cleveland, O., had a number of heaters on display, and were represented by L. R. Mendelson.

The H. Mueller Mfg. Co., of Decatur, Ill., had a very attractive display of plumbers' brass goods, which attracted unusual attention. They were represented by P. L. Bean, R. L. Moore and Geo. W. White.

Hungerford & Bowery Co., of Chicago, distributors for the Pittsburg Water Heater Co., had an automatic water heater on display, and were represented by W. F. Blake.

The Borden Co., of Warren, O., had an attractive display of "Beaver" die stocks and pipe cutters. V. M. Gaspar, representative of the company, was in charge.

The Leader Iron Works, of Decatur, Ill., used their booth to display two hot water storage tanks. Laurens Cook, advertising manager, and Chas. B. Irish, manager of the concern's St. Louis branch, were on hand to explain the merits of this recently added product of the company.

The Ruud Mfg. Co., of Pittsburgh, Pa., displayed an automatic water heater, with Carl Singer, of the firm's St. Louis branch, in charge.

The Champaign and Urbana Master Plumbers' Association had one of the most attractive displays. In their booth they displayed a completely equipped modern bathroom.

Other salesmen in attendance were: Thos. M. Parker, Detroit Range Boiler & Steel Barrel Co., Detroit, Mich.; R. E. Larson, Wolverine Brass Works, Grand Rapids, Mich.; R. J. Haake, Ross Manufacturing Co., Kansas City, Mo.; L. J. Peterson, American Radiator Co., Chicago; Wm. A. Conwell, the J. L. Mott Iron Works, Trenton, N. J.; R. C. Woolner, sales manager of the Wolff Mfg. Co., Chicago; Jno. T. Fitzsimmons, Plumbing Sales Co., Chicago; L. Friedman, Chicago; M. S. Todd, Asbestos Products Co., Chicago; E. R. Griesz, of Thatcher Furnace Co.'s Chicago branch.

The municipally-owned repair shops, installed in Chicago at an expense of $2,700,000, have proved a dismal failure and have been closed.

The Reichstag in Germany lately adopted a bill regulating exchange transactions with the idea of curbing speculation and traffic in foreign exchange. The bill will become operative March 1.

HUMPHREY CO.
MILWAUKEE AIR POWER PUMP CO.
DECATUR PUMP CO.
DECATUR ILL.
GEO. H. EGGERS CO.
"Dayton" SYSTEM
FORT WAYNE ENGINEERING & MFG. CO. FORT WAYNE, IND.
DURO PUMP MANUFACTURING CO. DAYTON, OHIO

Some of the Exhibits at the Illinois Master Plumbers' Convention.—At the Top: Humphrey Co., Kalamazoo, Mich., and Milwaukee Air Power Pump Co., Milwaukee, Wis. In the Center: Decatur Pump Co., Decatur, Ill.; Dayton Pump & Mfg. Co., Dayton, O., and Geo. H. Eggers Co., Chicago. At the Bottom: Fort Wayne Engineering & Manufacturing Co., Fort Wayne, Ind., and the Duro Pump & Manufacturing Co. Dayton, O.

HEATING *and* VENTILATING ENGINEERS *in* ANNUAL MEETING

Many Important Papers Read and Discussed at the Twenty-Eighth Annual Meeting of the American Society of Heating and Ventilating Engineers, Held at Hotel Pennsylvania, New York, January 24-26, 1922

WHILE there were many excellent papers read at the twenty-eighth annual meeting of the American Society of Heating and Ventilating Engineers, held at the Hotel Pennsylvania in New York City, Jan. 24-25-26, the one of the greatest general interest, particularly to readers of "Domestic Engineering," was probably that read by P. J. Dougherty, of Utica, N. Y., member of the society.

Mr. Dougherty dealt with the subject of "Heating the Average Home Economically," and began by defining nine principal factors or conditions. If any one of those nine factors should be below par, the result would be an unsatisfactory heating plant that otherwise might be a great success.

The owner of the house is responsible for four of these factors, said Mr. Dougherty: the heating contractor for three, and the manufacturer for two. The owner is responsible for and should furnish a properly constructed building, ample draft, suitable fuel, and intelligent operation of the heating plant. A Government Bulletin issued during the war made this statement on the subject of saving fuel in heating boilers: "Unquestionably, with any fuel, the prime factor determining fuel consumption and freedom from operating troubles, although it may not be generally recognized, is method of operation."

There is a great difference in the winter climate of Texas and Minnesota, yet during the war it was found that practically the same quantity of coal was needed to heat a house in one state as in the other. The explanation of this is that in cold parts of the country houses are necessarily well built and can thus be kept heated with a relatively less quantity of fuel. In this connection it is noted, the speaker pointed out, that heavy building paper and shingles placed over the siding of a poorly constructed frame house will materially reduce fuel bills and also painting bills. Metal weather strips on all outside doors and windows are also essential. The leakage around three average windows in a room is frequently equal in area to a pipe 8 inches in diameter.

A strong draft, properly controlled, is the best fuel economizer on the market but faulty chimneys are responsible for more heating troubles than any other condition. A chimney less than 35 ft. high is erratic and uncertain in its action and usually gives trouble in rainy or snowy weather. A tile, 12 inches by 12 inches, is the best size for the average house but no tile less than 8 inches by 12 inches should be used. A 4-inch tight brick partition should separate all the lined flues in a chimney. All heater flues should be subjected to a smoke test and made tight before being accepted; leaky flues being the most frequent cause of draft troubles. No other connection should be made to the heater flue but that of the heater.

In regard to fuel, Mr. Dougherty emphasized various points. No fuel should contain more than 10 per cent ash, as for every increase of 1 per cent over this proportion the coal bill is increased 2 per cent. Stove or range is the best kind of coal to use in most heaters.

Next to a good draft a good fireman is very essential and he must realize that the time to save coal is in the fall and spring, not in mid-winter. Most people overshake their fires in fall and spring and not enough in mid-winter. In this connection, Mr. Dougherty emphasized an important distinction: that grates are not shaken to remove the ashes so much as to make room for more coal. Another important point is the necessity for maintaining a deep fire.

Both heater and piping should be covered with asbestos.

The next series of responsibilities are those of the heating contractor and engineer, in which connection Mr. Dougherty stressed the fact that unfair competition and peddling bids sometimes forced a heating contractor to install a plant below the capacity required. Contrary to the belief of many uninformed people, a plant that is above the necessary capacity is more economical than one that is below what is actually required. The heating boiler in the average home is below the capacity needed to heat the premises efficiently.

All boilers in private houses should be rated on at least a 10-hour basis, the general practice now being an 8-hour basis. Mr. Dougherty argued that the Heating and Piping Contractors' Association should set a 10-hour standard as in the case of furnaces.

The operating conditions of most heating plants in homes are far below standard testing conditions and the result of this is that small boilers are installed from 50 to 100 per cent greater in capacity than the amount of radiating surface installed.

Just as air cracks in a cigar wrapper spoil a smoke, so the short circuiting of the hot gases through a boiler and the leakage of air between the sections into the flue travel because of improper cementing of the spaces between the sections is a frequent cause of heating trouble.

The responsibilities of the manufacturer were defined by Mr. Dougherty as the proper rating and design of the heater. He noted with pleasure that the Boiler Testing Code of the society had some years back sounded the death knell to the old swivel chair method of rating boilers. Under that system a boiler was given as high a rating as the traffic would bear, and this was done by the officials of the company concerned in each case.

The design of a boiler was stressed by Mr. Dougherty as a basic factor in determining the economy of fuel, maintenance and attention, and important points in this connection he cited were the absence of soot pockets, easy access for keeping the heating surfaces clean, proper impingement of the hot gases and all heating surfaces, backed up by a positive rapid circulation of water.

The reading of Mr. Dougherty's paper was followed by an animated discussion, the first speaker being J. R. McColl, newly elected president of the society, who contented himself with an inquiry as to where the engineer came in in connection with these small home heating plants.

Mr. Dougherty explained that in such plants the engineer might justly be called on to assume some of the responsibilities of the heating contractor or manufacturer.

C. S. Scott remarked that Mr. Dougherty had stressed the question of draft and asked if he did not find that the design of chimneys was improving greatly in recent years. He thought also that architects are growing more and more capable of designing good flues.

Mr. Dougherty agreed with the speaker, stating that flue designing was undoubtedly much improved but until the society establishes responsibility and sets up standards for the little fellow the improvement would be of only slow growth.

Another speaker stated that he lived in a small house in Philadelphia roofed with shingles, as was the case with the majority of homes there. He thought the leakage through the shingles was responsible for a great loss of heat.

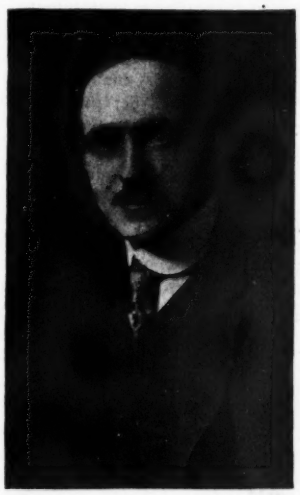
Mr. Dougherty agreed there was a loss that way.

Homer Addams, treasurer of the society, took the opportunity to pay a tribute to the Committee on Low Pressure Boilers than which he thought no committee had worked harder or more loyally. From 12 to 18 members had cooperated in this work both in New York and Pittsburgh and now that their task was over he had the greatest pleasure, as having the honor of being their chairman, in acknowledging the splendid spirit they had shown.

The work of the convention after the Business Session was divided into five professional sessions, devoted respectively to general subjects, ventilation, research, industrial, and heating.

Opening Session.

The three days' proceedings were opened on Tuesday afternoon by the address of Champlain L. Riley, retiring president. Mr. Riley said, in part, that there was a great deal of work to be carried out during the coming year and he looked for the co-operation of all the members with the new officers to handle this in the best interests of the society. One point he would like to stress was that the steady growth of membership would before long necessitate the writing of a new constitution. He considered this was becoming a big question, and one which involved many changes. For instance, he thought the business and financial affairs of the society should be kept separate from its professional activities. As the membership of the society increased and the number of chapters increased, more representation on the governing body would be sought and could not be denied. It might seem unnecessary to study this question now but he believed that the future growth of the society depended on equal representation of chapters in all parts of the country. Last month there were applications for new chapters from Colorado, San Francisco, and other distant points. If it had been possible he would have liked to have visited each of them on behalf of the society.



President-Elect J. R. McColl.

He wished also to draw attention to the American Medical Society which had a constitution which suggested some useful ideas to this society and would provide for the growth of the latter. Nine trustees control all the property of the Medical Society. They meet monthly or oftener. They have various grades of membership as in the case of the Heating and Ventilating Society and at a later date the members present would hear something of their method of handling elections and so on, as the whole subject is to be studied by a committee and will be reported upon in due course.

In concluding, President Riley remarked that this, the 28th year of the society, had been one of excellent progress and he hoped 1922 would excel it. He urged members to come forward with papers to be read at the meetings as every one benefitted by such papers, the members as a whole getting the benefit of the individual member's experience or researches and he in turn getting the benefit of their knowledge in the same field.

Retiring-President Champlain L. Riley.

C. W. Obert, secretary of the society, then read his report for the year. The general drift of his remarks was that, as stated by the retiring president, the year just ended had been one of excellent progress in every respect. The membership was now at high-water mark, being around 1,500, but it was hoped that this figure would be largely exceeded in 1922.

Election of Officers.

The remainder of the afternoon was devoted to the election of officers and general business, reports of committees, etc.

The new officers are as follows:

President: J. R. McColl, consulting engineer of McColl, Snyder and McLean, Detroit. Mr. McColl was with the University of Tennessee for ten years and previously with the Detroit School Board as chief engineer. Previous office with the society, first vice-president.

First Vice-President: H. P. Gant, of Philadelphia. Now practicing as consulting engineer, until ten years ago was with the Western Electric Co. at Chicago and New York. Previous office, second vice-president.

Second Vice-President: S. E. Dibble, of New Haven, Conn. Since 1915 has been professor of Heating and Ventilating at the Carnegie Institute of Technology.

Treasurer: Homer Addams, re-elected.

Secretary: C. W. Obert, re-elected.

Council: Jos. A. Cutler, Wm. H. Driscoll, E. S. Hallett, Prof. L. A. Harding, E. E. MacNab, H. J. Meyer, Champlain L. Riley, Perry West, and the President and First Vice-President, ex-officio members.

Much interest was aroused by the report on the Code of Ethics. The members of the Heating and Ventilating Society appointed to the Joint Committee were Frank T. Chapman, Stewart A. Jellett and Perry West, while the Joint Committee consisted of representatives of the following societies or institutes, in addition to the American Society of Heating and Ventilating Engineers: American Society of Civil Engineers, American Institute of Mining Engineers, American Society of Mechanical Engineers, American Institute of Electrical Engineers.

The Joint Committee voted to appoint a Standing Committee on Professional Conduct to administer the Code of Ethics under certain conditions laid down. The Code as reported to the parent societies is as follows:

A Code of Ethics for Engineers.

Engineering work has become an increasingly important factor in the progress of civilization and in the welfare of the community. The Engineering Profession is held responsible for the planning, construction and operation of such work

and is entitled to the position and authority which will enable it to discharge this responsibility and to render effective service to humanity.

That the dignity of their chosen profession may be maintained, it is the duty of all engineers to conduct themselves according to the principles of the following Code of Ethics:

1. The Engineer will carry on his professional work in a spirit of fairness to employees and contractors, fidelity to clients and employers, loyalty to his country and devotion to high ideals of courtesy and personal honor.

2. He will refrain from associating himself with or allowing the use of his name by an enterprise of questionable character.

3. He will advertise only in a dignified manner, being careful to avoid misleading statements.

4. He will regard as confidential any information obtained by him as to the business affairs and technical methods or processes of a client or employer.

5. He will inform a client or employer of any business connections, interests or affiliations which might influence his judgment or impair the disinterested quality of his services.

6. He will refrain from using any improper or questionable methods of soliciting professional work and will decline to pay or accept commissions for securing such work.

7. He will accept compensation, financial or otherwise, for a particular service, from one source only, except with the full knowledge and consent of all interested parties.

8. He will not use unfair means to win professional advancement or to injure the chances of another engineer to secure and hold employment.

9. He will cooperate in upbuilding the Engineering Profession by exchanging general information and experience with his fellow engineers and students of engineering and also by contributing to work of engineering societies, schools of applied science and the technical press.

10. He will interest himself in the public welfare in behalf of which he will be ready to apply his special knowledge, skill and training for the use and benefit of mankind.

Some Technical Papers Read at the Meeting.

The papers read at the General Session of the convention were briefly as follows:

Arthur K. Ohmes spoke on "The Heating, Ventilating and Mechanical Equipment of the Hotel Pennsylvania," said to be the largest hotel in the world. This address was followed with keen interest, first, because the convention was being held at the Pennsylvania, and secondly, because the remarks of Mr. Ohmes, who designed the mechanical equipment of the hotel, subsequently led the party on a tour of inspection through the kitchens and other service rooms and the engine rooms, three or four floors below street level.

The second paper at this session dealt with the subject of "Improvements in the Process for Cleaning and Drying Air Mechanically" and was prepared by William J. Baldwin, the oldest member of the society, and read by his granddaughter.

Mr. Baldwin's paper described recent developments in an aero-hydro-fan separator, previously outlined by him at the meeting in 1917. At that time this was a new design and was intended for the separation of water or watery matter, or moist dust, from air. He termed it the Baldwin method of washing, drying and conditioning air and said it was what might be called a tandem machine, as there are practically two or more separators on the same shaft, though located in a divided chamber.

The first part of the machine is a simple fan or any other means of moving air, and its function is to direct the air or gas, laden with cinders or dust or even with another gas, against the inside of a permeable revolving cylinder or rotor, which the substances held in suspension until the particles find the first holes through which they pass at an intensified velocity. The air or gas does not follow the particles as the chamber outside the rotor is a closed chamber.

This apparatus is not a propagating bed as insects are killed and thrown out through the waste pipes.

Walter L. Fleisher, member of the New York Chapter, then read a paper on "The Effect of Wind on Heating of Buildings," this subject being included at the request of the Standardization Committee of the Heating and Piping Contractors' National Association.

Mr. Fleisher explained how he had been interested in some method of figuring radiation losses and how by using various data he had obtained what he considered as good results for co-efficients of transmission as might be expected. He and the other members of the Standardization Committee were now trying to satisfy themselves on the selection of proper factors for varying wind velocities. These factors will determine the inleakage of air changes and the exposure co-efficients.

An interesting discovery noted by Mr. Fleisher was that as the temperature fell below a certain point, the danger point, the wind velocity also dropped, from which he realized that Nature was helping the heating engineer by tempering the wind to the temperature.

Wednesday Morning Session.

The Wednesday morning session was devoted to ventilation subjects, the first paper, entitled "Standardized Method of Measuring Fan Delivery," being read by E. N. Fales, a non-member.

Mr. Fales, who is an Aeronautical Engineer engaged in the War Department Air Service at Dayton, Ohio, pointed out that there appeared to be no accepted standard of measuring the output in comparing various cooling fans as regarded their aerodynamic characteristics. He had personally made use of methods familiar in wind tunnel and aeronautical research, in which he had obtained results of considerable precision.

Analyzing the spiral and accelerated flow of the blast, he found its cross-section a minimum, 0.75 diam. and its velocity maximum at about 0.5 diam. downstream of the blades. Here he judged the proper place to make the measurements. He used a pitot-venturi tube, as used on aircraft, giving a pressure reading one and one-half times the pitot tube alone. The manometer carried a special graduation enabling the observer to read off the velocity direct in feet per minute.

The second paper read at the Ventilation Session was by Fred F. Bahnson and Leona Maloney under the title of "The Importance of Pure Water Supply in Humidifying Systems." The authors, both of whom are from Winston-Salem, N. C., stressed the unity of the words Health and Humidity but regretted that no particular attention appeared to have been given to the source whence the water was obtained—a vital point in their opinion.

Consideration was given to the probable effects of impure water in humidifying systems, now in commercial operation, based on the evaporative methods employed and on tests of entrant and effluent water in different systems in use, in different localities and at different periods of the year.

E. S. Hallett then followed with an address on "Ozone in the St. Louis Schools," in which he described results obtained by experiments with this means in the ventilation of the schools in question. This subject had been previously treated at the 1920 Semi-Annual Meeting of the Society.

Mr. Hallett detailed some of the good results obtained in this way and contended that its success was no longer a question of the personal opinion of himself or any other individual but a proven fact. He invited those interested to visit the schools at St. Louis and see for themselves what had been done there.

Another paper was read by Dr. R. C. Holcomb, a non-member from Philadelphia, his subject being "Hospital Ship Ventilation." Dr. Holcomb illustrated the difficulty of this kind of ventilation by the fact that the ship might be off New York during December, during January and February

in the tropical waters of Guantanamo Bay, and throughout the summer off the Virginia Capes. In addition, there were 64 watertight compartments on the ship and this rendered necessary 27 different heating or ventilating sets.

Thursday's Sessions.

The proceedings on Thursday were opened by the Report of the Committee on Research, in which Dean F. Paul Anderson, the new director of the Research Laboratory of the Society, after some complimentary remarks by the president, outlined the work done during the year. Dean Anderson was previously with the University of Kentucky, where he occupied the position of Dean of the Engineering College.

Dean Anderson stated that the work, of which the Laboratory was prouder than of anything else it had accomplished, was the chart which the members would subsequently receive in connection with the address to be read that afternoon by O. W. Armspach and Margaret Ingels on the subject of "Temperature, Humidity and Air Motion Effects in Ventilation." He advised the members to preserve this chart very carefully as they would find it of invaluable use in their work.

First Vice-President H. P. Gant.

The address just referred to was then read by O. W. Armspach on behalf of himself and his partner in its preparation, Miss Ingels subsequently explaining the chart. Mr. Armspach gave some interesting data in regard to the fundamental laws underlying the loss of heat from the human body and the resulting feelings of comfort or discomfort, in air under various conditions of temperature, humidity and rate of air movement.

The chart, afterwards explained, showed the cooling power of air in B. t. u. per sq. ft. per hour under various conditions.

F. C. Houghton followed with a paper on "Studies in Heat Transmission" with special reference to building materials, stating that this was a difficult problem to solve as it presents itself in so many different ways and in various fields of engineering. The basis of all calculations on which heating contracts are given and taken is the heat transmission constants for the material entering into the construction of the building to be heated, yet the members of the Research Laboratory were frequently told by heating engineers of their utter lack of confidence in any of the constants available.

The Research Session was closed by a paper by G. W. Jones and W. P. Yant, non-members, and O. W. Armspach, member, all of Pittsburgh, Pa., the subject being "Oxides of Nitrogen Produced by Ozone Apparatus."

The subject was taken up in conjunction with the U. S. Bureau of Mines, which is interested in ventilation, particularly in relation to mining. The authors considered first the analytical method and reported the results of various experiments they had carried out on these lines, the conclusion reached being that the physiological effects from the oxides of nitrogen produced by the generators used appeared to be negligible.

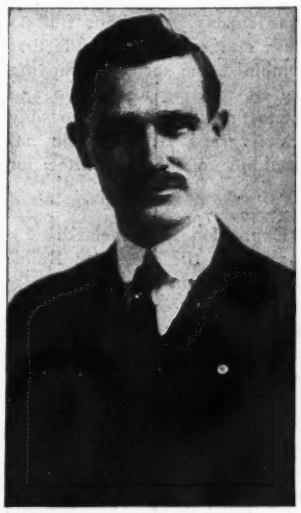
The Thursday afternoon session, which was devoted to Industrial Subjects, was opened by a paper on "The Control of Blower Motors," by Henry G. Issertell, a member of the New York Chapter, Mr. Issertell considered the selection of motors and their controls for driving enclosed fans of the paddle wheel, centrifugal or multi-vane type for the ventilation of buildings.

At the conclusion of this address Charles S. Scott begged permission to draw attention to the work of the Electric Power Club, a group which includes practically all the manufacturers of electrical apparatus, and which had accomplished much good work in standardizing the specifications. One result was that one could now buy an electric motor and know just what one is getting. He suggested a similar organization for the standardization of fans.

President Champlain L. Riley was pleased to inform Mr. Scott that a committee had already been established for fan standardization.

After a short address by Henry W. Banks, 3rd, on the subject of "Dehydration and Freshening of Cod Fish," the last paper of the convention was read by Frank A. DeBoos, who took up the subject of "The Under-Feed Stoker."

Mr. DeBoos noted that the subject of mechanical motor equipment is receiving more and more attention from heating and ventilating engineers owing to increased coal prices, higher cost of labor and material and other factors. He traced the history of the under-feed stoker from its invention in 1888. This was a very primitive affair burning wood and could not be compared with, for instance, the last multiple-retort stoker, the Jones automatic cleaning or A. C. Stoker, first installed in 1916-17.



Second Vice-President S. E. Dibble.

Mr. DeBoos noted the advantages of the under-feed stoker as the ability to operate at a high efficiency through wide fluctuations in the load and with a great range of coals; the utmost effect from the radiant heat, owing to the manner in which the coal is fed up underneath the fire; continuous boiler ratings owing to the forced draft; use of slack coal; considerable fuel saving, ranging from 15 to 25 per cent; complete combustion and smokeless operation.

The convention closed with discussion of some last-minute business and the installation of the newly elected officers. J. R. McColl announced that an invitation had been received to hold the society's summer meeting in Toronto in 1923. Another matter dealt with was a resolution to send to Professor L. A. Harding the sympathy of the society on the recent loss of his wife.

A member urged that more attention should be given by the society to the subject of piping, stating that the average installation consisted of 20 per cent boilers, 20 per cent radiation, and 60 per cent piping, and the society was, therefore, neglecting the biggest item of all.

Installation of Officers.

The newly elected officers were then installed.

J. R. McColl, the new president, in thanking the members present for the applause which greeted his induction, stated that there was a great deal of important work to be done in the new year and he needed the co-operation of all the members and especially of those who were on committees. He hoped they would respond to every demand he might make on them and he was quite sure they would do so.

H. P. Grant, first vice-president, welcomed the opportunity for service afforded by the honor they had conferred upon him. He noted the progress made by the society last year and the wonderful spirit developed by the members, which made him convinced there was an active and prosperous year ahead.

S. E. Dibble, second vice-president, was not present to be formally installed.

Homer Addams, treasurer, thanked the members briefly for their courtesy in re-electing him and welcomed the opportunity of continuing his best efforts in their service.

A visiting member then briefly thanked the New York Chapter for the entertainment they had provided as hosts for this convention. This included a Ladies'. Tea on Tuesday afternoon and a Reception-Dance in the evening, a sightseeing tour for the ladies on Wednesday afternoon and the annual dinner dance in the evening, a luncheon for the ladies on Thursday morning, a theatre party in the afternoon, and dinner and theatre parties in the evening.

It was reported that two invitations had been received for the summer meeting of the society, one from Buffalo and the other from Detroit. The suggestion was made that these suggestions should be combined, the society occupying the first two or three days of its meeting at Buffalo and then taking the boat to Detroit to finish there, with possibly a session on the boat. This was agreed to by a large majority and the vote was passed on to the committee for consideration.

The American Building Exposition in Cleveland.

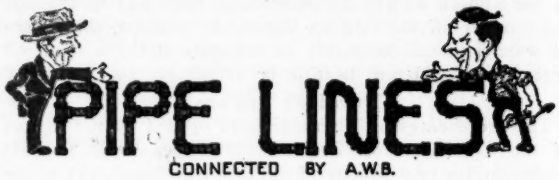
Although there is no assurance that the American Building Exposition will be held at the time and place originally scheduled for it, the Heating and Piping Contractors' Cleveland Association is going ahead with its plans for a comprehensive display of equipment and material used in this particular branch of the building industry.

As has been stated before in these columns, Mayor Fred Kohler several weeks ago issued an edict that the Public Hall, wherein the exposition is scheduled to hold forth, will not be opened until it is turned over to the city complete in every detail. Excuse for this stand appears to be that the mayor is fearful that if the city accepts the hall in an uncompleted state, it can be held responsible in one way or another by contractors.

Officers of the Cleveland Complete Building Show Company, of which Ralph P. Stoddard is managing director, and R. G. Collier assistant manager, have held frequent meetings with the mayor in an effort to get him to change his mind, and other meetings of interested citizens have been held, all to no end.

"The building show must be held in the auditorium and on the date set for it, February 22," says Mr. Stoddard. "Nothing else will do. Arrangements have gone too far. Virtually all the space was taken several weeks ago. Exhibits have been completed by different building industry organizations, and all exhibits are partly completed. Aside from the fact that the loss will run into many hundreds of thousands of dollars, there is the economic factor that must be considered. The building show held at this time means added stimulus to the building business, will give the workers in the industry plenty of work through the summer of 1922, and besides pointing the way to many for building their houses for their own use, will have an influence in bringing down high rents and reduce costs of living."

At the same time the Heating and Piping Contractors' Cleveland Association is moving ahead with its exhibit plans. Some of the exhibitors that will join with this display, as announced by Ed Maurer, the Maurer Bros. Co., committee chairman, are: the H. B. Smith Company, W. M. Pattison Supply Company, Mouat-Squires Company, Appliance Heater Manufacturing Company and Hart & Crouse Company.



SONG OF THE OFFICE BOY.

I wish I was a little rock a settin' on a hill,
Doin' nothin' all day long but just a settin' still.
I wouldn't eat, I wouldn't drink, I wouldn't even wash,
But set and set a million years, and rest myself b'gosh.

SOMEBODY'S STENOG, Wilmington, Del.

A little boy was playing out in the front yard when a man went by on a motorcycle with a lady sitting in the side car. Never having seen such a thing before, the boy ran into the house crying, "Mother, a man just went by on a bicycle, with a lady sitting in a bath tub." J. A. D., Eau Claire, Wis.

AN ANSWER THAT ISN'T AN ANSWER.

I could not couple the couple of Ps as they should be coupled in Pipe lines without solder. But I uncoupled them so far as is needed to spell PIE—and that's all any plumber wants.

FLORIDA, DeFuniak Springs, Fla.

A good smoke is still offered for the right coupling.

ON THE WITNESS STAND.

Lawyer: Do you belong to any secret orders?

Witness: "Sure I do. Odd Fellows, K. P.'s, and the plumber's union. KAREL, Milwaukee.

BEDTIME STORIES.

Once a boss plumber was in the act of retiring for the night. He was having trouble trying to untie a knot in his shoelace. "Annie," he called to his wife, "come here and help me undo this knot."

"Don't waste your good sleep," she drawled. "Break the string and take the knot out in the morning."

H. C. E., Lynbrook, L. I.

No success, great or small, comes without the help of all.

B. L. D., Prairie du Chien, Wis.

THEN HE SENT FOR A PLUMBER.

"I thought your husband was mechanical?"

"He thought so too until he tried to stop a leak in the bathroom." NICK, Chicago.

HE WAS SO IGNORANT.

He thought a bedroom suite was a pair of pajamas.

L. J. K., Chicago.

THEY KEEP THE HOME SMOKES SMOKING.

A news item says divorces are practically unknown in Sweden. But isn't that what you would expect in a land of safety matches? FELIX, New York.

THE VILLAGE SMITHY.

Under the spreading shower bath
The village smithy stands;
He washes his face, and washes his neck,
And also washes his hands.

WHO-WHO, K'zoo, Mich.

"Prosperity," says Brother Johns, "makes us all feel like dancin' a jig, an' when we gets done dancin' an' payin' de fiddler we ain't got no more prosperity."

MIKE QUINN, Scranton, Pa.

ONLY ON SPECIAL OCCASIONS.

Bobby, age six, was out in the back yard. His mother opened the door and called him. "Come, my boy. I want you to come now and take a bath."

"A bath?" questioned the lad. "Not a bath in the bath tub?"

"Yes, Bobby, a bath in the tub—all over."

"All over?" echoed Bobby. "Where are we going?"

B. L., Beatrice, Neb.

THE SECRET IS OUT.

Doesn't A. W. B. mean that Pipe Lines are connected by A Wrong Bend? A. D. B., Kirksville, Mo.

Perhaps A. D. B. (A Deserving Booster) is entitled to that good smoke. But be that as it may, all of you keep on keeping on with your Good Lines to Pipe Lines. A. W. B.

Exchanging Ideas is the Foundation of Progress

What Associations Are Doing

Through United Effort the Individual Succeeds

St. Louis Heating and Ventilating Engineers Meet.

The St. Louis Chapter of The American Society of Heating and Ventilating Engineers, held its regular monthly meeting at the City Club, January 19th. President Wm. C. Sodemann announced the following committees for the year:

Membership: V. D. Rossman, chairman; W. Keiser, Thos. J. Hester.

Entertainment: R. K. Milward, chairman; A. L. Haller, L. J. DeNeille.

Chapter Relations: E. S. Hallet, chairman; E. P. Bradley, W. G. Hooper.

Publicity: W. Klein, chairman; Hy. Hammer, G. H. Nader.

Program: L. Walter Moon, chairman; H. E. Sproull, A. H. Vogel.

Legislation: E. B. Langenberg, chairman; G. W. Cooper, A. H. Riley.

The meeting was addressed briefly by Chas. K. Foster, vice-president of the American Radiator Company in which he pointed out the importance of heating and sanitation to society, and urged the necessity of every member of the trade upholding the dignity of the trade and assuming the high place that is rightfully his in the industrial life of the nation.

The speaker of the evening, H. E. Sproull, gave a very interesting and instructive talk on "Fans, Blowers, and their Application." The lecture was illustrated with slides. Mr. Sproull traced the development of fans from the first hand fans used by the ancients to clean their grain and followed the development of housings and blades to the present advanced types for ventilating and exhausting, and showed their application, in buildings, schools, mines, mills, etc.

Some interesting views were shown of the early attempts in house, restaurant, and hospital ventilation, where an individual pipe was used for each person. A view of a lead smelting works was shown before and after the application of a system of bags through which the destructive fumes are drawn and returned to the furnace thus allowing the reclaimation of thousands of acres of land, that had been despoiled by the fumes from the stacks.

The meeting adjourned at 10 p. m.

Philadelphia Master Plumbers' Annual Meeting.

The Master Plumbers' Association, of Philadelphia, the largest guild of master craftsmen in the United States, has closed its fiscal year and commenced another, after recording the greatest progress in its history. Not only is it preparing to put the full backing of its more than 700 members behind 1922 plans for co-operating in trade extension and educational work, but it is going to be very busily identified with state and national association activities. A general meeting was held at the Builders' Exchange recently, and the slate of officers and directors (which had been subject to considerable discussion as regards membership among the latter) was voted on as follows: John A. Quinn, of Frankford, president, vice-presidents, Robt. G. Weir, Wm. Boal, Duncan A. Worrell, Frank P. Dougherty, Ephraim Catsiff; secretary, Robt. H. Pflug-Felder; treasurer, George Moeller; directors, Wm. H. Ambrose (retiring president), George F. Uber, D. F. Durkin, Jr., Wm. H. Anderson, Edward F. Roberts, Harry L. Righter, Elvin H. Mackay was made Sergeant-at-Arms.

The standing committees appointed are as follows:

Sanitary:—Wm. H. Ambrose, George Caldwell, O. K. McFarland, George Boon, H. L. Hurlburt.

Membership:—Robt. G. Weir, Wm. B. Fox, Albert A. Baierle, Robt. Hunter, M. J. Kennedy, Jos. H. Anderson, Maney J. Feeney, Fred J. Beck, George Noon, Jos. M. McGinnis, L. Toy, Jos. H. Morris, James A. Gordon, Albert E. Young, Wm. Kettlewell, S. J. Wilson, A. Russell, Wm. H. Decker, Y. Jorgenson.

Auditing:—D. D. Whealin, Duncan A. Worrell, Eugene Quindlen, Gilbert Lowener, Charles Jann.

Registration:—H. L. Righter, Elvin H. Mackay, Chas. Wilkinson, D. F. Durkin, Jr.

Apprenticeship:—George F. Uber, George M. Hicks, Hugh McElwee, Ernest Schenck, Harry Mick.

Educational:—Wm. Savage, Martin J. Morgan, R. G. Allen, Harry G. Black, Frank P. Dougherty, F. M. Colbert, W. A. C. Alexander.

Legislation:—Wm. McCoach, Howard Smith, W. M. Anderson, Wm. Boal, George F. Ubert, Edward F. Roberts, David R. Burns, Andrew J. Martin.

Wm. H. Ambrose and D. F. Durkin, Jr., are to get behind the movement to send at least 50 delegates to the national convention in Detroit next June. Charles F. Uber is chairman of the state convention committee, in charge of plans for the gathering of Pennsylvania plumbers here in May.

More than $45,000 has been spent by members of this association in trade extension work during the year, and the institutional work, comprising trade education in accounting, costs, etc., has been made thorough and far-reaching.

Massachusetts North Suburban Master Plumbers' Annual Meeting.

The annual meeting of the Massachusetts North Suburban Master Plumbers' Association was held Thursday evening, January 26th, at headquarters in Malden, Mass., when the entire old board of officers was re-elected. They are: President, M. F. Coakley, of the Stanley Heating Co., of Malden; vice-president, S. Pearl Brock, of Brock Bros., Melrose; financial secretary, L. P. Bresnahan, of Medford; corresponding secretary, Neil McNevin, of Oakes & McNevin, of Malden; treasurer, Carl B. Sawyer, of Francis Bros., of Reading.

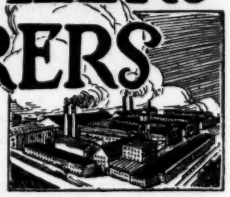
Installation of these officers will take place at a meeting to be held February 24th.

The association now comprises members in Malden, Melrose, Everett, Medford, Wakefield, Stoneham, Winchester and Reading.

Reports from the officers showed a healthy increase in membership and a substantial balance in the treasury.

Austrian Kronen have in Vienna dropped to 10,000 to the dollar, according to a dispatch to the Associated Press. The par value of the kronen is 20.3 cents.

AMONG THE WHOLESALERS AND MANVFACTVRERS



NEW PLUMBING SUPPLY HOUSE IN YORK, PA.

The Careva Supply Co., Inc., is the name of a new company which is making arrangements to open a plumbing supply business in York, Pa. E. G. Carpenter, for 12 years connected with the Walls, Owen & Stambach Co., Philadelphia, and Mr. Evans, formerly of the Goulds Mfg. Co., Seneca Falls, N. Y., are at the head of the new company.

NEW SUPPLY HOUSE IN PHILADELPHIA.

The North Philadelphia Plumbing Supply Co. is the name of a new supply house which has just been opened at 3233 Germantown Avenue, Philadelphia, Pa. The new company is headed by Edward B. McDade and Carl D. Loesch, who have been connected with the Haines, Jones & Cadbury Co., of Philadelphia, for several years. Robert G. Foster, a real estate dealer, and N. Walter Rhodes, a plumbing contractor of many years' standing, are associated with Mr. McDade and Mr. Loesch in their new venture.

ADDING PLUMBING SUPPLY DEPARTMENT.

The Smyth-Despard Co., of Utica, N. Y., is adding a plumbing supply department to its mill supply business.

OPENS OFFICE IN MADISON, WIS.

The Duro Pump & Manufacturing Co., of Dayton, O., has a new office at 222 Washington Building, Madison, Wis., in charge of F. O. Markee and E. H. Shaefer.

TO CELEBRATE OPENING OF WAREHOUSE.

A. Fell, of Mt. Vernon, N. Y., will celebrate the opening of a new warehouse for his supply business, on Wednesday, February 15th. Invitations have been extended to plumbing and heating contractors in Westchester county.

BAKER SPECIALTY & SUPPLY CO. IN NEW QUARTERS.

The Baker Specialty & Supply Co., of Logansport, Ind., has just moved into its new fireproof building at Berkley and Erie Avenues, in that city. The building is 120x200 ft., and has a private railroad switch.

McLOUGHLIN SUPPLY CO. IN HANDS OF RECEIVER.

An involuntary petition in bankruptcy has been filed against the McLoughlin Supply Co. in Long Island City, N. Y., and a receiver has been appointed by the court. It is alleged the company's liabilities are $125,000 and its assets $100,000. T. M. McLoughlin, Jr., vice-president of the company, declares that this "predicament is only a temporary one. Our company is solvent, and we are fully confident of our ability to come through this unpleasant situation and continue in business."

HOFFMAN SPECIALTY CO.'S SALESMEN IN ANNUAL CONVENTION.

The Hoffman Specialty Co., of Waterbury, Conn., held its annual salesmen's convention during the week of January 23rd. The company's representatives were present from all over the country, and a very constructive program was carried out. The January 23, 24, 25 and 26, business sessions were held at the Biltmore, New York City, and these were presided over by Mr. George D. Hoffman, president and founder of the business. On Monday evening, January 23, dinner was served at the Biltmore, and the attendance was augmented by the presence of several guests and some forty plumbing and heating supply jobbers. The latter gentlemen were particularly interested in the talk of C. V. Haynes, the new vice-president and general sales manager of the company, who discussed very interestingly the sale of Hoffman products by the jobber. Mr. Hoyt, of Hoyt's Service, New York City, discussed advertising in general, particularly as to its bearing on Hoffman goods. Mr. Parlin, statistician of the Curtis Publishing Company, Philadelphia, Pa., spoke optimistically on country-wide conditions. The sessions on Friday and Saturday were resumed at Waterbury, Conn., where the general offices of the company are located, and this gave each man the opportunity of visiting the company's plant. The following officers and sales representatives of the company attended the meeting: Geo. D. Hoffman, president; W. K. Simpson, secretary, Waterbury, Conn.; F. H. Gaylord, Minneapolis; E. S. Storm, vice-president, Chicago; F. C. Reeder, Knoxville, Tenn.; J. W. Crossley, Erie, Pa.; R. R. Emerson, New York; J. K. Peacock, New York; G. A. Suits, Boston; Mr. Pierce, Boston; H. F. Hobby, New York; Wm. Bowles, Chicago; C. V. Haynes, vice-president and general manager, Waterbury, Conn.

The company has just announced the appointment of two new representatives on its sales force: Edward F. Pierce, Jr., in Boston, and Homer F. Hobby at its New York office.

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by the "American Contractor":

$2,000,000 theatre and market house, store and offices, Cleveland, Ohio; The Euclid Superior Market Co.

$1,250,000 plant, Kansas City, Mo.; Kansas City Cold Storage & Warehouse Co.

$1,000,000 temple, Davenport, Iowa; Masonic Lodge & Park Lane.

$500,000 office building, Pittsburgh, Pa.; Joint Ownership Const. Co.

$500,000 bank and office building, Elyria, Ohio; The Elyria Savings & Trust Co.

$500,000 apartment house, Pittsburgh, Pa.; Joint Ownership Const. Co.

$300,000 building, Cincinnati, Ohio; The Home for the Friendless.

$200,000 store building, Ithaca, N. Y.; Treman, King & Co.

$200,000 hospital, Tuxedo Park, N. Y.; The Tuxedo Hospital Association.

$200,000 office building, Pittsburgh, Pa.; B. F. Jones.

$160,000 residence, Baltimore, Md.; Frank Novak Realty Co.

$150,000 auditorium and armory, Superior, Minn.; City of Superior.

$150,000 theatre building, Baltimore, Md.; Metropolitan Theater Co.

$150,000 school, Memphis, Tenn.; State Bd. of Public Instruction.

$140,000 school building, Pittsburgh, Pa.; Board of Education.

$130,186 club house, Atlantic City, N. J.; Loyal Order of Moose, No. 116.

$130,000 dormitory, Library and gymnasium, Johnson City, Tenn.; State Board of Public Instruction.

$3,000,000 hotel, theater and arcade building, Akron, Ohio; Akron Prospect Co.

$250,000 school, Dayton, Ohio; Board of Education.

$200,000 church and Sunday school, Topeka, Kans.; First M. E. Church.

$191,976 building, Philadelphia, Pa.; City of Philadelphia.

$150,000 school, Dayton, O.; Board of Education.

$150,000 store building, St. Louis, Mo.; Missouri Botanical Assn.

$150,000 hospital, Philadelphia, Pa.; Chester Hospital.

$150,000 school, Hudson Falls, N. Y.; Village of Hudson Falls.

$100,000 sewerage disposal plant, Brazil, Ind.; City of Brazil.

$100,000 plant, Charlottesville, Va.; City of Charlottesville.

$202,750 school, Camden, N. J.; Board of Education.

UTICA HEATER CO. HOLDS ANNUAL SALES CONVENTION.

The annual sales convention of the Utica Heater Co., of Utica, N. Y., was held January 10th, 11th and 12th in the Hotel Utica in that city. This three-day meeting, attended by fifty of the company's salesmen, proved to be most interesting and beneficial. Five regular business sessions were held, at which all of the company's various products were discussed and explained thoroughly. General problems in heating were considered, practical installation was the subject of one discussion, and the important phases of salesmanship, territory development and prices and terms were thoroughly covered at the various sessions.

Thursday afternoon and evening, the last day of the convention, was devoted to an inspection of the plant, followed by a dinner at 6:45 in the English Room of the Hotel Utica.

The Annual Convention of the Utica Heater Co., Utica, N. Y.

PERSONAL MENTION.

Lewis F. Ostrander, vice-president of The O-E Specialty Mfg. Co., Milwaukee, Wis., is on an extensive business trip to eastern jobbing centers. Immediately on his return from the East, Mr. Ostrander will leave for important points on the Pacific Coast.

C. P. Wadley, president of the Excelso Specialty Works, Buffalo, N. Y., called on several of his friends in the trade in New York City last week.

Charles F. Hause, president of the Chas. F. Hause Mfg. Co., Inc., of Omaha, Nebr., was in Chicago this week on his return from a trip through the East.

W. M. Pattison, president of the W. M. Pattison Supply Co., Cleveland, O., and a member of the auxiliary board of the Guardian Savings & Trust Co., Cleveland, has been elected a member of the board of directors.

B. T. Beardsley.

B. T. Beardsley, for many years connected with the Wolff Mfg. Co., of Chicago, has just been appointed sales representative for the Sloan Valve Company, of Chicago. He will make his headquarters in the Oliver Building, Pittsburgh, and will cover western Pennsylvania, West Virginia, and southeastern Ohio, for the Sloan Company.

H. M. Algeo, formerly with the Chicago office of the Wheeling Steel & Iron Co., of Wheeling, W. Va., has joined the sales force of the American Pin Co., of Waterbury, Conn.

Walter Jamison, sales manager of the valve department of The Ohio Brass Company, Mansfield, Ohio, visited New York City last week in the interests of his company.

Alfred G. Smith has severed his connection with the James Robertson Manufacturing Co., of Baltimore, Md., and has started in business under the name of Smith Specialty Company, 721 Appleton St., Baltimore, Md., manufacturing plumbing specialties.

L. Bruce Fulton left Chicago Friday night for Pittsburgh where he will attend a meeting of the Sales Managers of the Standard Sanitary Manufacturing Company. After the Pittsburgh meeting Mr. Fulton will go to New York to attend the meeting of The Eastern Supply Association.

H. Melvin Harris, manager of the heating department of Bishop & Babcock Co., Cleveland, Ohio, was in New York City last week, attending the annual meeting of the American Society of Heating and Ventilating Engineers.

A. W. Luck, president of The Reading Heater & Supply Co., Reading, Pa., greeted many of his old friends in the trade in New York City last week.

Wm. G. Brewton, Drexel Building, Philadelphia, Pa., has just been assigned a larger territory by the Charles A. Miller Co., of Sturgis, Mich. His territory will, in the future, include New England, New York State (with the exception of New York City), Pennsylvania and Atlantic Seaboard south to the Gulf.

Twenty Years Ago in "Domestic Engineering"

Saturday, February 1, 1902.

Nashville's Plumbing Report.—During 1901 the following plumbing fixtures were installed in Nashville, Tenn.: Water closets, 385; bathtubs, 287; kitchen sinks, 291; wash stands, 197; urinals, 96; wash trays, 85; slop sinks, 103; bar fixtures, 94.

All in Now.—Fred Fox, president of the Tennessee Master Plumbers' Association, has brought in Memphis, Nashville and Clarksville. These were the only cities in the state that had remained out of the association.

Will Finish Soon.—E. Baggot Co., of Chicago, expects to finish the plumbing of the beautiful Bush Temple Theatre building by the first of March.

A Relic of Other Days.—Workmen excavating for the foundation of the new Randolph street bridge, Chicago, uncovered an old wooden water main and box drain. These were parts of Chicago's first water supply system. They are supposed to date back to about 1848, when residents west of the river were supplied with water pumped by a miller whose mill was at the foot of Lake Street.

Master Plumbers Organize.—The master plumbers of Pittsfield, Mass., have organized an association. They will at once take steps to secure the appointment of an inspector of plumbing for Pittsfield.

Good Contract.—Gunster & Forsyth, of Scranton, Pa., have secured the plumbing contract for the new Y. M. C. A. building of that city.

Finest Finished Office Building.—To finish the Frick building in Pittsburgh in the way in which it had been planned, contractors were compelled to take over the quarry at Carrara, Italy. The entire output of this quarry, which produces the finest of the Italian marble, has been taken for a year or more. When finished the Frick will be the most superbly finished office building in the world.

Death.—A. Morris Collins, for many years buyer for E. W. Blatchford & Co., Chicago, died very suddenly January 26 from the shock of an operation for appendicitis.

Captain Goss Dead.—Captain Henry Goss, for many years one of the most prominent master plumbers in Kansas City, died unexpectedly on January 26.

Tube Prices Advance.—Seamless steel tube prices have been advanced about 10 per cent. The urgent demand for tubes, the steel scarcity, and the car shortage are responsible for the increase in price. German steel billets are now being shipped into the United States.

Not Hot Air.—There are rumors of a new machine about to be put on the market that will prove of interest to plumbers. It is a cooling device intended to deliver dry, cold air in any room.

New York Press Job.—Paul S. Bolger has the big job of plumbing the new buildings for the New York "Press."

Joseph Berla, Syracuse, N. Y., has opened a new combination store and plumbing shop at 485 Westport Street. Mr. Berla will carry hardware, gas range and electric supplies and he intends to equip an up-to-date plumbing showroom.

CONVENTION DATES.

February 7, 8 and 9, 1922.—The 27th annual convention of the Minnesota Retail Plumbers' Association, at Duluth, Minn., with headquarters at the Spalding Hotel.

February 8, 1922.—Winter meeting of the Eastern Supply Association, at Hotel Astor, New York City.

February 13, 1922.—Winter meeting of the American Boiler Manufacturers' Association, at Fort Pitt Hotel, Pittsburgh, Pa.

February 14, 15 and 16, 1922.—The annual convention of Ohio State Association of Master Plumbers, at Canton, O.

February 15, 1922.—The winter meeting of the Central Supply Association, at Hotel Stratford, Chicago.

February 20, 21 and 22, 1922.—The annual convention of Nebraska Retail Plumbers' Association, at Omaha, Neb.

February 24 and 25, 1922.—The annual convention of the Montana State Association of Master Plumbers, at Boulder Hot Springs, Boulder, Mont.

March 7, 8 and 9, 1922.—The annual convention of the State Association of Master Plumbers in North Dakota, at Grand Forks.

March 13 and 14, 1922.—The third annual convention of the South Dakota Retail Plumbers' Association, at Huron, S. Dak., with headquarters at the Elks' Hotel.

March 13, 14 and 15, 1922.—The annual convention of the Indiana Society of Sanitary Engineers to be held at Indianapolis.

March 20 and 21, 1922.—The annual convention of the Missouri State Association of Master Plumbers, at Kansas City, Mo.

March 27 and 28, 1922.—The annual convention of the Kansas Master Plumbers' Association, at Salina, Kansas.

March 28 and 29, 1922.—Annual convention of the Michigan State Association of Plumbing and Heating Contractors at Flint, Mich. Headquarters will be in the Durant Hotel.

April 10, 11 and 12, 1922.—The annual convention of the Oklahoma State Association of Master Plumbers, at Shawnee, Okla.

April 17 and 18, 1922.—The annual convention of the Tennessee State Association of Sanitary Engineers, at Memphis, Tenn.

April 18, 19 and 20, 1922.—The next annual convention of Iowa Master Plumbers' Association, in Mason City, Iowa.

May 2 and 3, 1922.—The annual convention of Colorado Society of Sanitary and Heating Engineers. It has not yet been decided where the convention will be held.

May 8 and 9, 1922.—The twelfth annual convention of the North Carolina Association of Master Plumbers, at Asheville, N. C.

May 12 and 13, 1922.—The annual convention of the Association of Master Plumbers of the State of Washington, at Tacoma, Wash.

May 15, 16 and 17, 1922.—The annual convention of the Kentucky State Association of Master Plumbers in Ashland, Ky.

May 19 and 20, 1922.—The annual convention of the Oregon State Association of Master Plumbers, at Seaside, Ore.

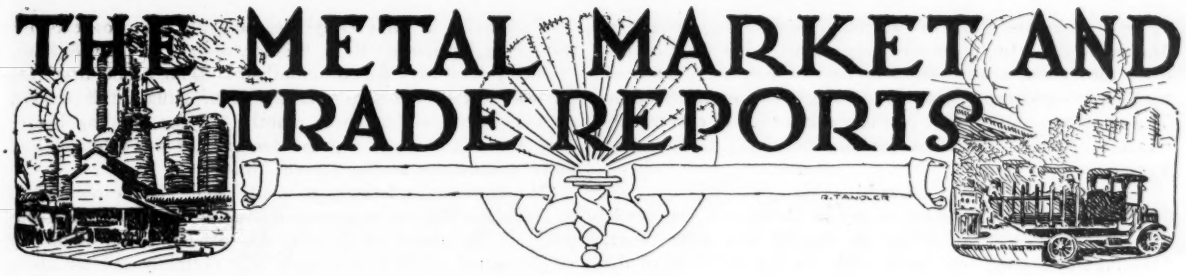
May 22, 23 and 24, 1922.—The annual convention of the State Association of Master Plumbers of California, at Sacramento, Calif.

June 6, 7 and 8, 1922.—The fortieth annual convention of the National Association of Master Plumbers, in Detroit.

February 14, 1922.—Masquerade Ball, Detroit Association of Sanitary and Heating Contractors, Harmonic Hall, Detroit, Michigan.

February 20, 1922.—Concert and Reception of the Master Plumbers' Association of Greater New York, to be held at the Hotel Pennsylvania in New York City.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Developments indicate that it is not wise to be over-optimistic about the condition of the steel business. The bright return of boom days, so freely predicted by certain careless observers, has not happened. The revival which was to follow the opening of the new year with great rapidity has not occurred. Business in the steel industry still lags, still exhibits caution and delay and shows signs of further retrenchment. Nobody believes other than that there will be good business in steel products ultimately, but doubt exists as to when the period of heightened activity will come.

Tonnage comes in slowly and orders are eagerly sought by keen sales forces. Competition for business which was looked upon with contempt a few months ago is now keen. Economies are being more rigidly practiced throughout all well conducted organizations. Costs are scrutinized with the severest eye. Additional employees have been laid off, wherever a man can be spared, and work is being divided around among others, so that as many as possible may have employment. Companies owning houses in which employees live have suspended collection of rents and have extended credit in company stores so that their workers may be tided over the winter.

While independent steel companies report that buying is on a broader scale, operations are still being retarded and employment is far below normal. At many mill gates each morning men are turned away, though the mills are endeavoring to divide what work there is as equitably as possible. Buying is scarcely up to expectations of producing interests. An example of losses sustained by some of the major makers in 1921 is indicated in the annual report of the Brier Hill Steel Company, whose aggregate deficit was $3,874,475.

Business in the Chicago district will be helped by a new river-rail rate to New Orleans of 28 cents a ton, effective January 30th, which is aiding this district to secure orders for sheets for shipment to Japan. Chicago mills have been handicapped by the high rates to the Pacific Coast. Until recently the rates were 71 cents to the Pacific Coast, all rail export, this having been reduced later to 50 cents. However, Pittsburg mills have a rate of only 28 cents, all rail export rates to New York. Hence the new river-rail rates to New Orleans will greatly assist mills in the Chicago district. Chief business in the Chicago district is in railroad material. The Central of Georgia has ordered 500 box cars from the Mt. Vernon Car Manufacturing Company. The Chicago Northwestern has purchased 50 passenger service cars from the American Car & Foundry Company.

The Illinois Central is expected to buy 20,000 tons of rails and track supplies and the Rock Island 25,000 tons in the near future. The market on track supplies is weak. Tie plants have sold at as low as $37 f. o. b. mill. As low as 2.10 cents Pittsburg has been quoted on standard spikes. On track bolts under 3.15 has been done.

In the Chicago district labor trouble in the building industry is holding up contemplated work. Notwithstanding, bids were received for 20,000 tons of structural steel for the headhouse and concourse of the Chicago Union Station. Some tank inquiries from the Oklahoma oil fields have been figured on by Chicago fabricators, but doubt is expressed as to whether they will result in orders.

A few more inquiries for pig iron came before the trade last week and the outlook is more encouraging. Several reasons are given for the increase. One is that inventory taking is over and purchasing policy for the first half year has been defined. A more unusual reason is the threatened coal strike on April 1, which is worrying the trade more and more. Undoubtedly many of the inquiries of the week past have been prompted by the possibility of such a strike and jobbers are ordering their iron early to avoid the rush.

More radiator and furnace manufacturers came into the market. The largest inquiry was that of a northern New Jersey stove and radiator maker for 6,000 tons of No. 2 plain and No. 2X, the size of which will cause much interest in a market devoted principally to small lots. Seldom has one particular line of pig iron consumers been so conspicuous for their buying as the heater manufacturers at the present time. In normal times the demand is scattered and one cannot point to any one line as the principal consumers.

Most furnaces are still reluctant to take second quarter business because of the uncertain future. The popular form of compromise is to start delivery in March, continuing through April, cutting off the end of that month. If the coal strike develops, car shortages are expected because of the rush by consumers to cover themselves with coal and coke. Some foundries are hesitating to contract iron from furnaces too distantly located because of the added complications which would ensue in case of the strike. Prices for pig iron are quoted as follows:

No. 2 Pittsburgh	$21.46@21.96
No. 2X Philadelphia	21.34@21.76
No. 2 Southern, Birmingham	16.00@16.50
No. 2 Chicago	19.00@19.50
Basic valley, furnace	18.25@18.75
Bessemer, Pittsburg	21.46@21.96

Copper.

Business from abroad is characterized as disappointing. What business has been taken has been at a little better than 14 cents, c. i. f. European ports, by the export association. The refinery price for lots up to 100 tons ranges from 13⅜ cents to 13½ cents, refinery. Some alleged resale copper has been placed on the market recently. It is not known whether this is actual resale material, which was once contracted for by a consumer, or whether it is material direct from the producers, and called by them resale as an excuse to shade quotations.

Hope is still strong for the future business. Electrification of railroads and the development of hydro-electric power facilities will furnish considerable demand. New copper from the properties now preparing to restart operations will not be placed on the market before April and hence is not an immediate factor.

Tin.

The week past has seen an incident where the London tin market did not dominate the New York market. While prices were declining in London, local sales of about 500 tons brought the market up. On account of the concentration of stocks the premium for spot Straits has been advanced to

½ cent above the price of futures. Though the arrivals in March promise to be heavy, only about 1,500 tons of the 6,485 tons afloat are expected to land in February, hence it would seem that prompt tin will be scarce for another month. The quotation at the close of the week was 31¼ cents. Arrivals at Atlantic ports for January are 3,835 tons and at Pacific ports 75 tons.

Lead.

Lead has held the firmest of any of the metals last week. On some brands in the West the market is a trifle easier. Offerings of prompt lead were made toward the close of the week at 4.35 cents. Most producers have sufficient bookings through the month of February to make it unnecessary for them to meet lower quotations.

On the New York Exchange at the end of the week prices remained the same on the basis East St. Louis delivery with 4.35 cents bid, 4.425 cents asked and 4⅞ cents settling price for spot, January and February delivery. The settling price of New York delivery declined 2½ points for January and February to 4.725 cents, settling price spot remaining the same at 4¾ cents.

Zinc.

Some producers are keeping pace with second hands in shading prices, while other producers have withdrawn from the market. Prompt shipment East St. Louis, is 4.55 cents to 4.60 cents, with New York at 4.90 cents to 4.95 cents.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum Powder .....60 to 65 cents per lb.
Aluminum (in 50-ton lots) 99% and purer..25 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	10⅞ to 11⅛ cents	11⅞ cents
Copper, light	8⅝ to 8⅞ cents	9⅞ cents
Brass, heavy	5¼ to 5½ cents	6¼ cents
Lead, heavy	3⅞ to 4 cents	4¼ cents
Tea lead	2½ to 3 cents	3½ cents
Crucible copper	11¼ to 11½ cents	12¼ cents
Zinc	2½ to 2½ cents	3 cents

Chicago Old Metal Market.

Chicago Wholesale dealers' prices are nominally as follows:

	Buying	Selling
Heavy yellow brass	5 to 5¼ cents	6¼ cents
Brass, light	4 to 4½ cents	5½ cents
Red brass	8 to 8½ cents	9 cents
Copper, heavy	9½ to 10 cents	10½ cents
Copper, light	7 to 7½ cents	8½ cents
Lead, heavy	3½ to 3¾ cents	4 cents
Zinc	2½ to 2¾ cents	3¾ cents

In the Chicago Supply Market.

Chicago, January 31.—At the end of the first month of the new year the supply market shows a slightly improved tone. Most manufacturers' representatives report a slight increase in general activity, some of them even feel that the situation has become decidedly encouraging in the past week.

The only price change noted was a reduction in boiler prices by the American Radiator Company. This reduction will amount to between 5 per cent and 7½ per cent. The car lot freight allowance has been cut to 30 cents, the same as that set on radiation in the recent change in that line.

"Our business is going right along," said Mr. McGinnis, of the Standard Sanitary Manufacturing Co., "and we have no room for complaint. I believe that prices have reached a stable level and in all probability there will be no changes in enameled ware or earthenware for some time to come. Brass may fluctuate somewhat due to the uncertainty of the metal market, but at the present time brass is absolutely down to a pre-war basis."

"Personally, I am greatly pleased with the prospects for the spring," remarked R. C. Flinder, of Jas. B. Clow & Sons. "January is always a poor month, but things look first rate for the rest of the year. If the labor situation is cleared up soon there will be three months left for building before May 1st, and there is a great demand for more homes and more apartments at the present time."

"We have started the year pretty well," is the opinion of S. Davidson Herron, representative of the A. M. Byers Company. "The month of January has proven better than any single month of 1921, although 1921 certainly fell far short of being a banner year. We don't want a repetition of those times and I don't feel that we will have, from now on business is forging ahead on a safe and sane level."

J. D. Purdy, western manager of Spang, Chalfant & Co., is of the opinion that things are still a little slow. "While we have enjoyed a pretty fair volume of business," he said, "there seems to be no pulse to the market. Buying seems to be spasmodic; every now and then something breaks and somebody gets it. We have had enough break our way to net us a fairly good, but rather uncertain business."

Pipe has remained stationary for a number of weeks, now, and manufacturers feel that there can hardly be any further reductions until wages come down. "Pipe is lower now, in proportion to wages, than it has ever been," was the remark of one manufacturer's representative. Any further cut in prices will only mean a loss to the manufacturer and if we operate at a loss, increased buying cannot remedy the situation. I think that as soon as buying starts prices will be obliged to take a slight increase."

In the Philadelphia Supply Market.

Philadelphia, January 28.—There is less bottom, and less room to drop despite that, in the plumbing supply market here than for many a day. Briefly, as one supply man described it "There is not enough business to go around, and smaller jobbers are cutting their profits down to nothing in order to get business." It is the opinion of John G. Fleck, of Fleck Bros. Co., that this state of affairs cannot last very long.

With a 10/10/2 discount basis on soil pipe, that commodity seems about at pre-war level. Nobody professes to expect it to go lower. Philadelphia seems prepared to outdo New York in hacking away at soil pipe prices, partly, no doubt, because of the nearer proximity to the southern market.

Brass is up about a cent in the ordinary range of fixtures. Pottery staples are boosted 10 per cent, according to factory quotations. Specials continue to be rather weak, but these items are in process of being "ironed out," according to one large supply house here.

It is certain that the position of the consuming market as a whole will not stand for any whit of inflation here. As an instance and a guide to appreciation of what has happened to building specialty trades since the industrial depression began here, rates advertised for wiring a house have declined from $110 to as low as $65 since last summer. The plumbing trades have been similarly hard hit. The sentiment toward the possibilities of spring trade is generally hopeful, but conditions here at present are not satisfactory.

Reduce Prices on Pumps About 10 Per Cent.

Duro Pump & Mfg. Co., Dayton, O., has just mailed the trade a new price sheet, which shows a decrease in prices of nearly all sizes and styles of pumps in its line. In the average the price is reduced about 10 per cent.

Secretary Herbert Hoover says that the Government has been advising public utilities and industries to stock up with coal in anticipation of a strike in the coal industry toward the last of March, when the national agreements covering wages and working conditions with the miners expire.

An Open Letter to the Plumber.

PEIRCE D. SCHENCK, President
W. E. HALL, Vice President
J. R. PITMAN, Vice President
J. DART JR., Secretary
R. A. HERBRUCK, Treasurer.

DURIRON Acid Proof TRADE MARK

THE DURIRON COMPANY, INC
GENERAL OFFICE AND WORKS, DAYTON, OHIO.

DAYTON, OHIO

NEW YORK
CHICAGO
ATLANTA
CLEVELAND
PITTSBURGH
DENVER
MONTREAL
SALT LAKE CITY
SAN FRANCISCO

PLEASE ADDRESS YOUR REPLY TO THE COMPANY, ATTENTION OF

Mr. Plumber,
Everywhere.

Dear Sir:

You are always interested in profits.

We want you to know how to make greater profits with the same labor cost.

It is always to your interest to use the material that will give you the greatest profit per job, especially when that material has no equal for the purpose.

If you furnish your customer with an installation that gives perfect and permanent service -- that does away with repairs and replacement -- you are just about sure to have a satisfied customer, and his good will is an asset that always helps.

Is it not, therefore, to your interest to know how and why DURIRON DRAIN LINES will both increase your profits and make satisfied customers for you?

We'll tell you on the three following pages.

Yours for greater profits,

THE DURIRON COMPANY, INC.

DURIRON IS SOLD ONLY FOR USE AS SPECIFIED BY THIS COMPANY
NO CLAIM FOR LABOR OR DAMAGES WILL BE ALLOWED

DURIRON—WHAT? WHERE? WHY?

What is Duriron?

A cast metal that is not affected by acids, alkalis or rust.

In what form is it furnished?

Extra heavy Soil Pipe, Sanitary Fittings and Floor Drains (besides all kinds of chemical apparatus).

How is Duriron Pipe cut and installed?

Just like cast iron soil pipe.

Where is it needed?

Where other kinds of pipe eat out or rust away, or leak at joints from building vibration, etc.

How long will Duriron Pipe stand the worst conditions?

Practically forever; it will outlast the building.

Why should the Plumber push its sale?

Because it yields him a much larger profit, and at the same time saves the owner money. Being a more costly job, put in with the same labor expense as cast iron, his profit is greater; and it means a satisfied customer.

Who makes Duriron?

The Duriron Company, Inc., Dayton, Ohio.

Where may it be obtained?

Through your Jobber, or direct from the factory.

How is it identified?

The name DURIRON (registered trade mark) cast on every piece.

Is Duriron a recent discovery?

No; it has been made since 1912, and is standard material in the chemical industry wherever acids are handled.

What are Duriron's advantages over all other materials for resisting acids?

(1) Resists all acids. (2) Has no lining or coating to crack, peel or blister. (3) Will not sag from heat; needs no drip pans or concrete protection; may be carried anywhere without danger of injuring structure. (4) Duriron joints are caulked with lead, and stay tight under the most severe conditions.

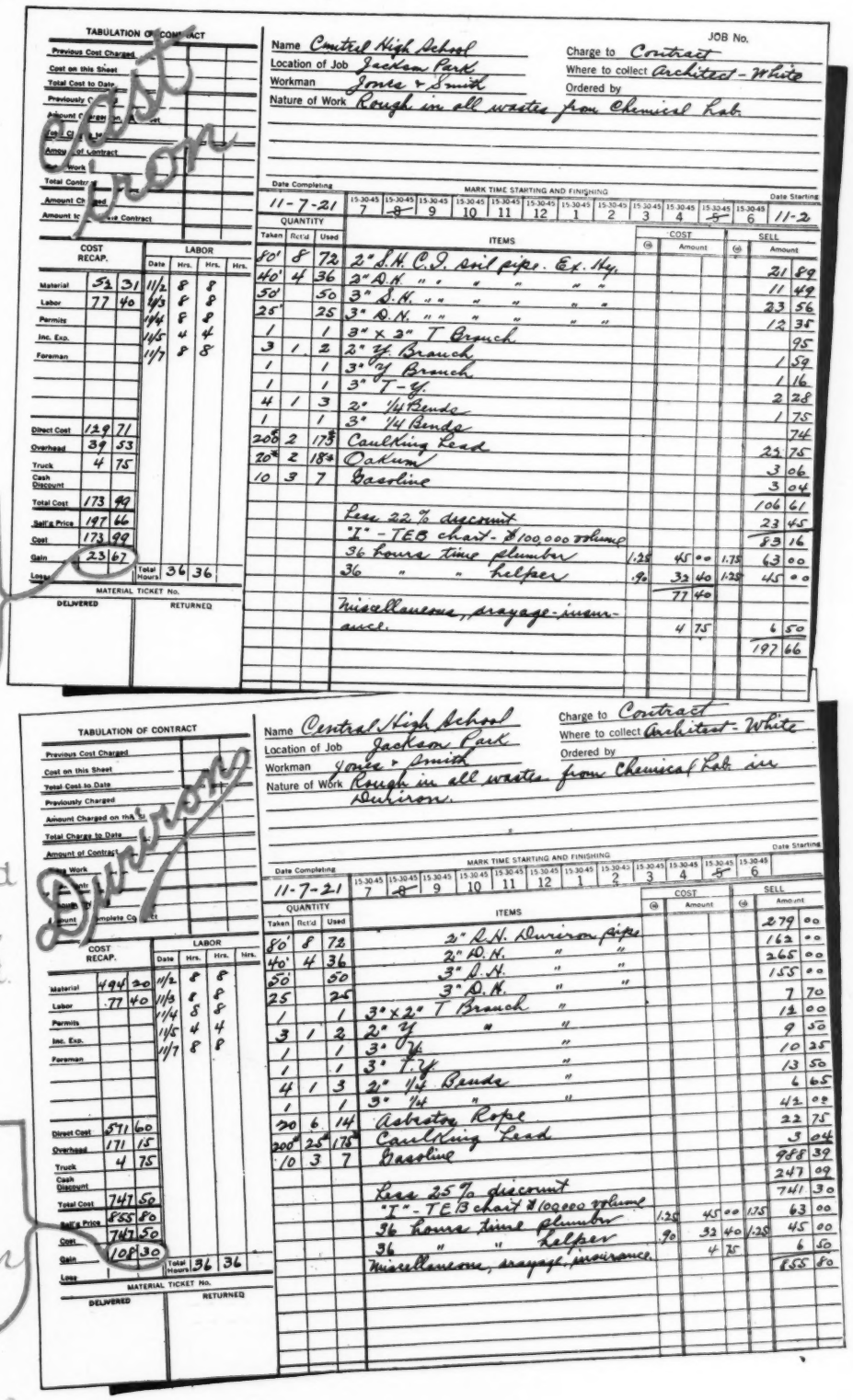
Here is one job figured by The Trade Extension Bureau's System of bookkeeping—With this system (or any other) the increased profit is there just the same.

Note that the labor is exactly the same.

Profit $23.67 with cast iron

Recommend DURIRON and get this bigger profit.

Profit $108.30 with Duriron



TABULATION OF CONTRACT

Cast Iron

Name Central High School
Location of Job Jackson Park
Workman Jones & Smith
Nature of Work Rough in all wastes from Chemical Lab.

JOB No.
Charge to Contract
Where to collect Architect - White
Ordered by

Date Completing 11-7-21
MARK TIME STARTING AND FINISHING 7 8 9 10 11 12 1 2 3 4 5 6
Date Starting 11-2

QUANTITY Taken	Rec'd	Used	ITEMS	COST @	COST Amount	SELL @	SELL Amount
80'	8	72	2" S.H. C.I. soil pipe. Ex. Hy.				21 89
40'	4	36	2" D.H. " " " " "				11 49
50'		50	3" S.H. " " " " "				23 56
25'		25	3" D.H. " " " " "				12 38
1		1	3" x 2" T Branch				95
3	1	2	2" Y. Branch				1 59
1		1	3" Y Branch				1 16
1		1	3" T-Y.				2 28
4	1	3	2" 1/4 Bends				1 75
1		1	3" 1/4 Bends				74
200#	2	178	Caulking Lead				23 75
20#	2	18#	Oakum				3 06
10	3	7	Gasoline				3 04
							106 61
			Less 22% discount				23 45
			"I" - TEB chart - $100,000 volume				83 16
			36 hours time plumber	1.25	45 00	1.75	63 00
			36 " " helper	.90	32 40	1.25	45 00
					77 40		
			Miscellaneous, drayage, insurance.		4 75		6 50
							197 66

COST RECAP.

Material	52	31
Labor	77	40
Permits		
Inc. Exp.		
Foreman		
Direct Cost	129	71
Overhead	39	53
Truck	4	75
Cash Discount		
Total Cost	173	99
Sell'g Price	197	66
Cost	173	99
Gain	23	67
Loss		

LABOR

Date	Hrs.	Hrs.	Hrs.
11/2	8	8	
11/3	8	8	
11/4	8	8	
11/5	4	4	
11/7	8	8	
Total Hours	36	36	

MATERIAL TICKET No.
DELIVERED RETURNED

TABULATION OF CONTRACT

Duriron

Name Central High School
Location of Job Jackson Park
Workman Jones & Smith
Nature of Work Rough in all wastes from Chemical Lab. in Duriron.

Charge to Contract
Where to collect Architect - White
Ordered by

Date Completing 11-7-21
MARK TIME STARTING AND FINISHING 7 8 9 10 11 12 1 2 3 4 5 6
Date Starting

QUANTITY Taken	Rec'd	Used	ITEMS	COST @	COST Amount	SELL @	SELL Amount
80'	8	72	2" R.H. Duriron pipe				279 00
40'	4	36	2" D.H. " "				162 00
50'		50	3" R.H. " "				265 00
25'		25	3" D.H. " "				155 00
1		1	3" x 2" T Branch "				7 70
3	1	2	2" Y " "				12 00
1		1	3" Y "				9 50
1		1	3" T-Y "				10 25
4	1	3	2" 1/4 Bends "				13 50
1		1	3" 1/4 " "				6 65
20	6	14	Asbestos Rope				42 00
200#	25#	175	Caulking Lead				22 75
10	3	7	Gasoline				3 04
							988 39
			Less 25% discount				247 09
			"I" - TEB chart $100,000 volume				741 30
			36 hours time plumber	1.25	45 00	1.75	63 00
			36 " " helper	.90	32 40	1.25	45 00
			Miscellaneous, drayage, insurance.		4 75		6 50
							855 80

COST RECAP.

Material	494	30
Labor	77	40
Permits		
Inc. Exp.		
Foreman		
Direct Cost	571	70
Overhead	171	15
Truck	4	75
Cash Discount		
Total Cost	747	50
Sell'g Price	855	80
Cost	747	50
Gain	108	30
Loss		

LABOR

Date	Hrs.	Hrs.	Hrs.
11/2	8	8	
11/3	8	8	
11/4	8	8	
11/5	4	4	
11/7	8	8	
Total Hours	36	36	

MATERIAL TICKET No.
DELIVERED RETURNED

TO
THE DURIRON CO.,
DAYTON, OHIO

NAME.....

STREET.....

CITY..... STATE.....

MEMBERS
THE NATIONAL
TRADE EXTENSION BUREAU
OF THE
PLUMBING AND HEATING INDUSTRY.
PERMIT NO. 87 REGISTERED.

fill out and mail we'll send you "SELLING DURIRON DRAIN LINES"

The Field for Duriron Drain Lines

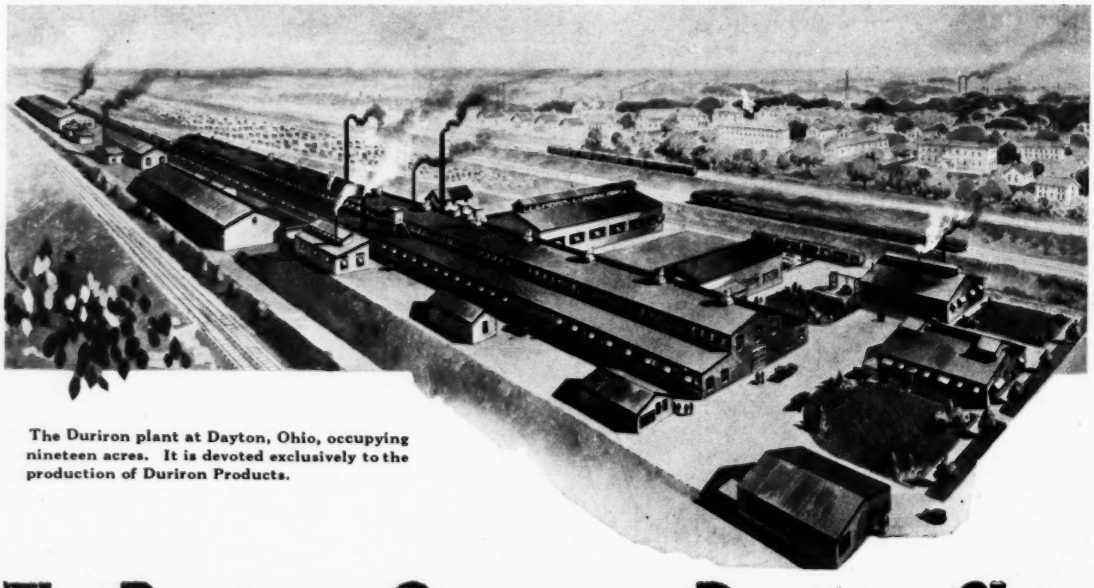
If you have read the preceding page, you know your profits will be greater installing Duriron Drain Lines.

You may think, however, that the field for them is limited; but we know from experience that there is need for them **everywhere and all the time;** that they serve a purpose no other material can; and that every owner is a booster.

Below is a partial list of industries, etc., where Duriron now is giving perfect and permanent service.

Let us send you full information on how to secure this desirable and profitable business.

Alcohol Manfrs.
Aluminum Goods
Art Metal Products
Artificial Silk Manfrs.
Automobiles, Parts and Ac.
Baking Powder Manfrs.
Battery Manfrs.
Battery Stations
Blacking and Polish Mfr.
Bleaching
Brine, Ice, Packers
Celluloid Manfrs.
Chemicals and Medicines
Chemical Laboratories
Chewing Gum Manfrs.
City Water Systems
Cleaning and Pol. Products
Coal Tar Products
Coke and Coal By-Products
College Laboratories
Comfort Stations
Dental Goods
Deodorants
Dyers
Dyestuff Manfrs.
Electrical Goods
Electroplaters
Electrotypers
Enamelers
Explosives
Fertilizer Manfrs.
Flavoring Extracts
Fruit Juices and Syrups
Galvanizing
Gas Plants
Glucose and Starch Manfrs.
Glue and Paste Manfrs.
Hospitals and Med. Bldgs.
Insecticides
Japanning
Jewelry Manfrs.
Laboratories
Laundries
Lithographers
Machine Parts
Markets
Metal Stamping
Mineral & Soda Water Mfr.
Moving Picture Laboratories
Mustard Manfrs.
Nickel Platers
Oil Refiners
Paper and Pulp Makers
Perfumes and Cosmetics
Photo Engravers
Pickle Manfrs.
Publishers
Rubber Recovery Plants
Salt Plants
Schools
Silversmiths
Soap Makers
Soda Fountains
Soft Drink Manfrs.
Stereotypers
Tanners
Textile Manfrs.
Turpentine and Rosin Mfr.
Vinegar Manfrs.
Watch Case Manfrs.



The Duriron plant at Dayton, Ohio, occupying nineteen acres. It is devoted exclusively to the production of Duriron Products.

The Duriron Company, Dayton Ohio

SALES OFFICES

New York Chicago Cleveland Atlanta Denver Salt Lake City San Francisco Montreal

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Judge K. M. Landis' Final Wage Decision in the Chicago Building Trades.

Judge K. M. Landis, in his final award on the building trades' wages made few changes. Plumbers' and steamfitters' wages remain at the figure set in the original award,—95 cents an hour, which will be automatically raised if certain changes in their contract are made. At the same time as the final announcement of wages set by the Judge was made, W. A. Curran, president of the building trades council, stated that the unions would abide by the Judge's decision and go back to work if the non-union men now employed in the building trades are withdrawn.

The citizens' committee has not yet taken definite action on this new phase of the situation, but according to several of its members there will be no compromise, and the trades now operating on open shop will remain so, the contention being that the union members by violating the terms of the award became outlawed as far as Chicago building is concerned.

Apparently, if both sides stand firm the deciding factor will be the contractor. He must choose between supporting the award in its entirety, which means retaining the non-union men who have been brought in to work, or supporting it in regard to wages only, reinstating the unions on a "status quo" as soon as they decide to work for the wages granted.

Plumbing and heating contractors are non-committal on the subject at present, as sufficient time has not yet elapsed to permit them to reach any definite decision as to policy.

Contracts Awarded in Chicago.

Although contracts awarded are not plentiful, building permits issued have kept up a lively pace throughout the first month of the new year. For January, 1922, they total about $8,000,000 which compares encouragingly with January, 1921, when slightly over $4,000,000 was reached. The largest permit in the past week was for a nine-story fireproof flat building to be erected at 1255 N. State Street at a cost of $800,000. Permits granted this week indicate $2,278,700 worth of construction projects.

G. Alvin Nilson, 155 North Clark Street, will install the plumbing in a $200,000 apartment building to be erected on the corner of Winthrop and Glendale avenues. The structure will contain forty-two apartments of two, three and four rooms each.

A three-story, thirty-one family apartment building now under construction at 4710-18 North Lawndale Avenue, will have heating installed by the National Heating and Piping Co., 2357 West 64th Street. The plumbing contract has been awarded to J. Schiller & Co., 1512 West Roosevelt Road.

C. J. Herbert & Son Co. has been awarded the plumbing contract on a $100,000 residence at 426 Arlington Place.

William P. Arnold will install the plumbing in a two-story, store and flat building that is now being erected at 2434-36 North Cicero Street. The heating contract on the same building goes to Harry Beckham, 2345 Roosevelt Road.

Ohio

Plans for the convention of the Ohio State Association of Master Plumbers were completed this week. The big event holds forth at Canton, February 14-16. Last call for attendance has been issued by President H. W. Eckhardt and Secretary Eb Ellen, of Cleveland, and a record attendance is assured from present responses. Mr. Eckhardt has been touring the state in the interest of the association generally and the convention particularly, and has been enthusiastically received everywhere. This will be the 31st annual gathering of the Ohio master plumbers.

Pennsylvania

Pittsburgh and Vicinity.

The tie-up in the steam fitters' trade in Pittsburgh, which started last June, was ended recently by the agreement of the joint conference committee in which the steam fitters were awarded a daily wage of $9. This wage was a compromise between the $10 demanded by the union and the $8 offered by the masters.

The W. N. Sauer Plumbing Co. has recently been awarded the plumbing and heating contract on the new addition to the Bell Telephone Company's central exchange building. The building is to be twenty-five stories high, and the plumbing and heating contract is one of the largest let in this city for some time.

The low bidders on the Stowe township school were: For plumbing, Reynold Busse, at $9,555, and for heating, Columbus Heating & Ventilating Co., at $14,200.

The Ladies Auxiliary of the Master Plumbers' Association will give a dance at the Maccabees Hall on February 17th. The committee has made arrangements for a large attendance and luncheon will be served during the evening. This is the first of a series of entertainments to be given during the year by the ladies.

D. W. Rhoades, plumbing and heating contractor, of Somerset, Pa., celebrated his forty-ninth birthday recently with a dinner to a large number of his friends. Many local members of the trade were present.

The Building Situation in Philadelphia.

A big item in futures, as noted in this publication before, is the world's fair project here, the location of which has considerable to do with the amount of building activity, and, incidentally, of plumbing and sewage disposal work to be done. Fourteen sites are under consideration, the two leading being the Fairmount Park and Parkway site, and the Southern Boulevard, or downtown site. This latter would be so located as to provide direct drainage into the lower Delaware river. Being on a flat, water pressure installations, etc., would probably be less expensive than those required for the Parkway site, which involves erecting many build-

The Speakman Mixometer

gives the desired shower temperature instantly. And its use on Speakman Showers is another reason for recommending them.

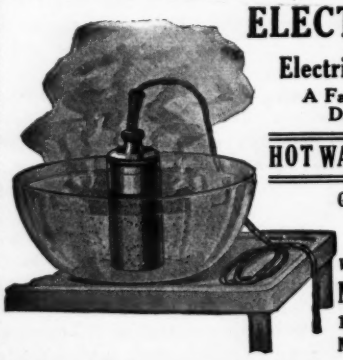
SPEAKMAN CO.
Wilmington, Del.

H-952½

WE are headquarters for all kinds of small sanitary plumbing ware—such as Basins, Urinals, Short Hoppers, etc.

Our lines are complete—Prompt shipments assured

John Maddock & Sons Trenton, New Jersey



ELECTRO-BOIL
Electric Water Heater
A Faithful Servant, Day or Night.

HOT WATER INSTANTLY

Guaranteed never to burn out.

A profitable line for the dealer.

Write for particulars.

Milwaukee Mfg. Co.
1316 Fond du Lac Ave.
MILWAUKEE, WIS.

The DETROIT Torch

A Marvel for Service and Durability

Highest quality brass tank, heavily reinforced, powerful improved burner, strong, efficient pump, hook and support for holding soldering coppers.

This torch eliminates the troubles that attend the use of the old-style torch.

Get a "DETROIT" from your jobber. You will be more than pleased with it.

Detroit Torch & Mfg. Co., Detroit, Mich.

ings on ground above the main service and ordinary sewage levels of the city.

Five million dollars have been appropriated by councils for beginning the project. Building, plumbing and heating contractors are already rubbing their fingers for a grab at the various "plums," which are bound to fall sooner or later. Definite building work already in sight, and of a permanent nature, which would be incorporated into the exposition plans if the Fairmount Park site is chosen, include the proposed palace of justice, already a city project, the public library, on the foundations of which work has been under way for some time, and a museum for housing the city's various art collections.

In addition to the exposition project, actual commencement of razing buildings at Front and Race Streets, to make way for the approaches of the new Philadelphia-to-Camden bridge over the Delaware, was begun ten days ago. It is probable that before the middle of the summer a number of office and industrial building projects will be announced for the strategic situation afforded near the end of the bridge which, unlike the structures between New York and Long Island, will end in a huge, open plaza, whose distinctive character will stimulate immediate erection of business and mercantile structures of considerable magnitude.

These developments in Philadelphia have put the building trades into a generally happy frame of mind as to the future.

Criticizes Building Loan Bonuses.

The Labor Bureau in Philadelphia, it is a matter of common knowledge, has had its difficulties. Pittsburgh has been after journeymen for several big contract jobs, and San Francisco had taken away others. Secretary Pflug-Felder says that most of these eventually have drifted back to Philadelphia, only to find little activity. However, the slackness in building activity reached an acute stage here last summer, and by no means all of it was blamable on the walk-out of the building trades. A well known firm of real-estate brokers wrote the following communication for publication last Sunday, and it appeared in the "Public Ledger," leading financial newspaper in Philadelphia. It has proven a bomb-shell among some of the building trades. Said this letter:

"A scandal is overdue in the building and loan associations of Philadelphia. It is practically impossible to obtain a loan from any association without paying a bonus of from 2 to 10 per cent, and this bonus is divided among only a few men controlling the associations, apparently without the knowledge of such officers as the president and treasurer.

"One of our neighbors, an officer of an old-established association, solicited from us applications for loans, and replying to our question told us no bonus need be paid. We were frankly skeptical and told him so, but at his request we allowed him to present an application for a second mortgage of $10,000 on a property where the aggregate liens would not exceed half the value of the property. The proposed borrower is thrifty, prosperous, healthy, and owns other property. Did we get the loan? We did not. This officer has now asked us to investigate and ascertain whether any money they have put out has been subject to a bonus. We expect to look into this.

"An officer of another association, a most reliable man of education and standing, also visited us, soliciting loans, and when we stated we would pay no bonus he assured us that his association never required a bonus. He gave us the name of the officer to whom we should make application. But when we presented an application this officer told us he must charge a bonus of 5 per cent, which was divided with the real estate broker. We declined to do business on any such basis. He has called us up since, again offering to divide the bonus. He is a man of good reputation."

This firm further cites other instances showing that bonuses of as high as ten per cent are demanded for building loans. There is every evidence that one big cause of the dearth in building trades activity in Philadelphia, secondary only to the general business depression, has been the tightening up on money for the individual builder, although it has been by no means easy for so-called building operators to do anything either, because of the price of some materials. Meantime, the Master Plumbers' Association is maintaining its ranks "in fighting trim," and preparing to do some extensive and intensive trade extension work as soon as the frost is out of the ground.

New York

Untermyer's Wage Proposal Rejected by Governors of Building Trades Employers' Association.

The rejection of the Untermyer wage proposal by the Board of Governors of the Building Trades Employers' Association was a development of the past week which has been received with varying comment in the New York City plumbing and heating industry. Those master plumbers who agree with Mr. Untermyer that the solution of labor cost problems in the building trades is to be found in the direction of greater efficiency rather than wage cuts are naturally disappointed by the step taken by the employers' organization, while other members of the plumbing fraternity who believe that wages in the building trades have got to be readjusted immediately in accordance with reduced costs of living, in order to make cheaper housing possible, are expressing approval of the turning down of the Untermyer proposition.

Mr. Untermyer's proposal was that the present wage scales in the building trades be continued throughout the year 1922, and that the wage scales for 1923 be based upon the findings of an arbitration board as to the efficiency of the workers and further reductions in the cost of living that may develop during the current year. In rejecting this plan, the employers' organization made public its reasons for doing so in a letter addressed to Mr. Untermyer by C. G. Norman, chairman of the Board of Governors, which read as follows:

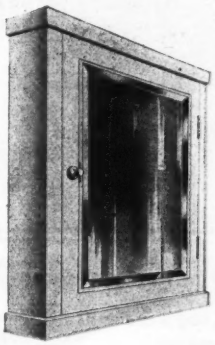
"Your proposition that a new contract be now made for two years from January 1, by and between the Building Trades Employers' Association and the Building Trades Council; that the present wage scale be continued for the year 1922; and that the wage scale for 1923 be based on that of 1922, subject to decrease or increase in the cost of living for the year 1922 as compared with 1921, provided that the continuance of the present wage scale and the amount of the wage scale for 1922 be conditioned as to the wages of $1.00 per hour for each member of the unions, upon the efficiency of each union separately considered, efficiency to be determined by an arbitration board of seven members has been considered by the trade associations, comprising the Building Trades Employers' Association.

"These trade associations have reported their conclusions to the Board of Governors and the board acting in accordance with the expressed will of the entire membership, has rejected your proposal.

"The present wage scale has been repeatedly condemned by the public. Its continuance without a fair hearing of all the facts relating thereto by the representatives of the public would be unfair to the public and to the 900 members of the Building Trades Employers' Association who are dependent upon the patronage of the public for a living.

"Housing is one of the principal items of expenditure considered in computing the cost of living. Our investiga-

Snow White Steel Medicine Cabinets and Lavatory Mirrors



Attractive and salable, liberally advertised. A rebate system applies on yearly sales and guarantees you the lowest quantity rate—the same as if the whole were purchased in one shipment. No stock to carry, nor tied up investment, except for samples.

Ask your jobber—or write us.

HESS TRADE MARK CHICAGO

The mark of quality

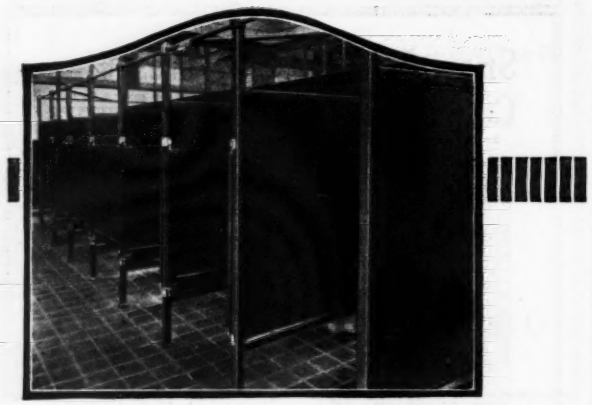
Hess Warming & Ventilating Company
1218 Tacoma Bldg., Chicago
Makers of HESS WELDED STEEL FURNACES

WOODWARD-WANGER CO. ENDURO KEEP UP THE QUALITY

The Reduced Price
lately made for the
ENDURO Hard Rubber Float

Puts the copper float in the "back-number" class. Remember that the "ENDURO" is fully guaranteed for 5 years. Write us for special price. No obligation.

Woodward-Wanger Co.
1106-1112 Spring Garden St. Philadelphia, Pa.



The Toilet Partitions Do Make a Difference

Clean-cut, sanitary toilet compartments—like this SANYMETAL installation in the Lavatory Building at the Lorain, Ohio, plant of The National Tube Co.—do make a difference.

Whether in industrial, commercial or public buildings, SANYMETAL gives the most in appearance, durability and sanitation for the least money. You can recommend SANYMETAL with confidence that your customer will be satisfied.

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tion conclusively shows that the peak in retail values has been passed and that the trend is now downward. The items of cost of housing construction, other than labor, have been greatly reduced. The prices of all materials have been reduced and the wages of all those employed in the manufacture of housing materials have been reduced. You now propose that the labor employed on housing construction, which up to the present has suffered no reduction from wartime wages, shall not only be exempted from a reduction during the whole year of 1922, but that its wages for 1923 shall not be reduced unless additional reductions shall be made in all of the other items entering into the cost of living, which must mean a still further reduction in wages of all other lines except the building line. It seems to me that the building trades unions would not ask for more.

"The solution of other problems almost as important as the wage question is necessary to the making of agreements with the building trades unions.

"We have not charged that the entire membership of any union has been guilty of shirking. The consideration given by the union in return for the wages paid is a fair day's work by its members, and to enter into arbitration before a numerous board upon the question of whether the consideration has not been or is not being given by the union would mean continuous arbitration as to the performance of the contract, which would be a cumbersome proceeding.

"The Building Trades Employers' Association has for seventeen years enforced an arbitration policy. The unions have for all that time assented to arbitration. We now feel that, in fairness to our members, the public should not only be a party to the arbitration, but should sit in all negotiations and participate in the settlement of all questions. We have fully advised the unions of our wishes."

The agreement between the employers and the Building Trades Council expired December 31, 1921, but the employers agreed to continue the 1921 wage scales for an additional month. It is believed that the employers association will now continue present wages on a month to month basis, pending agreement upon a proposition satisfactory to both sides.

Massachusetts

Boston and Vicinity.

Plans have been prepared by Lockwood, Greene & Co., for a new banking house and office building at 14-28 Federal Street for Harris, Forbes & Co. It will be brick and reinforced concrete, 11 stories, 81x70 and will cost $600,000.

Contracts are being awarded by the Lumber Mutual Fire Insurance Co., for its new office building at 632 Beacon Street, to be erected at a cost of $100,000.

Bids have been invited for sub-contracts for a dwelling costing $10,000, to be erected by Francis T. Keefe at 36 Church Street.

James S. Cassedy, of Cambridge, has just been awarded the plumbing contract for the Lumber Mutual Insurance Company's new office building at Beacon and Raleigh Streets. The building will cost $150,000.

The city is to start work soon on the erection of a junior high school building on Dizwell Street. Plans by Joseph Driscoll, 6 Beacon Street, call for brick and reinforced concrete, with 18 rooms and hall, to cost $660,000. The J. P. Dwyer Co., 183 Harrison Avenue, has the heating contract and the general contract has been awarded the Thomas O'Connell Co. The other sub-contracts will be awarded soon.

The R. D. Kimball Co., of Boston, are the heating and ventilating engineers for the Wakefield high school to be erected this spring. The building will be three stories, 208x86 and ell 150x50. Plans are by the Frank Irving Cooper Corp., Boston. The cost will be $650,000.

R. Wolfenden & Sons, of Attleboro, are to erect a new dye plant from private plans, brick and steel, 230x60, to cost $40,000. Subcontracts have not yet been awarded.

The Beverly City Council will meet Feb. 27 to take action for the construction of a new high school. It is probable that bids will be asked so that construction work may commence in the spring. The proposed building will cost about $750,000.

Plumbers in Indian Orchard have found new business results from the visit of prohibition enforcement agents. It develops that during a recent visit of dry agents several residents who had moonshine on hand dumped the mash and other stuff down the sewers with the result that, after the agents departed, it was necessary to engage plumbers to clean out the traps.

Winchester is to erect four new schoolhouses. A junior high school to cost $350,000, to house 600 pupils; a 12-room elementary school to cost $151,000, a nine-room building to cost $90,000 and a seven-room building to cost $80,500, are provided for in a proposed bond issue of $840,000. Plans will soon be in process of preparation for the buildings.

Architects Killum, Hopkins & Greeley have prepared plans for the South Junior high school of Waltham, to be erected at an estimated cost of $287,000, brick and stone, two stories, to house 600 pupils and with gymnasium, shower baths, etc. The plans have been approved by the school board and estimates will probably be asked during February.

Tucker & Rice, 165 Commercial Street, Worcester, has the contract for the heating and ventilating in the addition to be made to the Gates Lane graded schoolhouse, for the city of Worcester. Excavations are now being made.

R. E. Davies & Son, 15 Market Street, Northampton, have the plumbing contract in the large new laundry and garage building at Smith College, Northampton, Mass.

Connecticut

Hartford.

Murray & Mahoney, 20 New Park Avenue, Hartford, have the plumbing and heating contracts for the five two-family houses being built on Grandview Terrace, by Thomas C. Healy, 364 Franklin Street, Hartford.

Plans have been approved by the High School Plant and Building Commission for the new $1,500,000 high school, to be constructed on the site at Ridgefield and Greenfield Sts., Blue Hills Ave., and Westbourne Parkway.

The Board of Health, Dr. Charles P. Botsford, superintendent, is planning to erect a new ward building at the Municipal Hospital, to cost about $75,000.

New bids will be taken in February for the new parochial schoolhouse on Groton Street, Hartford, for Sts. Cyril & Methodius R. C. Church. The architect is Henry F. Ludorf, Mutual Building New Britain, and the plans call for a three-story, 150x65 brick and steel school with all the latest conveniences. Steam heat will be required. Cost, $175,000.

Herchmann & Levin, 223 Main Street, Hartford, Conn., are receiving bids on the store and apartment building to be constructed on the corner of Main and South Prospect Streets, that city. The structure will be 4 stories high, 75x 120 ft., and will contain forty apartments of two, three and four rooms each, with bath and kitchenettes. Steam or vapor heating system will be used.

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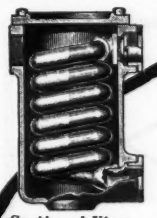

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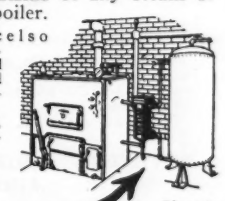

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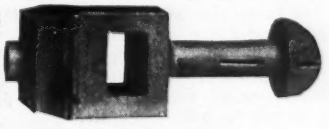
You can make a lifelong friend of every customer, which means an invaluable asset, wherever you install



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"See that the flues and heating surfaces are kept free from soot, scale and ash."

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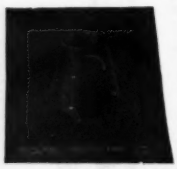

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The Hartford Orphan Asylum, Mrs. B. T. Williams, president, 15 Woodland Street, has chosen Architect Grosvenor Atterbury, 139 East 53rd Street, New York, to prepare the plans for the new orphanage buildings to be constructed on Bloomfield and Albany Avenues. Several structures will be built, and it is hoped to start work this year.

Other Cities in the State.

Clark, McMullen & Riley, 101 Park Avenue, New York City, are the steam heating and equipment engineers for the new buildings to be constructed at Avon, for the new Boys' School,—a gift to the town from Mrs. John W. Riddle, as a memorial to the late A. E. Pope. Several buildings will be erected at a cost of about $3,000,000. The Tidewater Building Co., 16 E. 33rd St., New York, has the general contract and is now at work making the site ready for building operations which will be started shortly.

James T. Kay, 127 State Street, Meriden, has been awarded the contract for the plumbing and heating in the new ward building being erected on Cook Avenue, by the Meriden City Hospital. The structure will cost about $350,000.

Louis Croll, 272 Elm Street, New Britain, plumbing, heating and tinning contractor, is having plans prepared for a two-story 50 by 90 brick and steel building to be erected at 278 Elm Street, that city, for his own use. Mr. Croll expects to have work started before spring.

R. R. Walkeley, 86 Everett Street, New Haven, is having plans prepared by Architects Della Valle & Vece, Exchange Building, for the construction of a fine new residence to cost about $30,000. It will be erected on Livingstone Street.

The First National Bank, Wallingford, is having plans prepared by Architects Holmes & Winslow, 134 East 44th St., New York, for a 40x80 reinforced concrete and fireproof banking house about 25 ft. high, on the corner of Main and Center Streets. Figures will be taken around March 1st and the cost is expected to run about $50,000.

R. H. Dana, Jr., 311 Madison Avenue, New York City, has been selected as architect for the new $400,000 Y. M. C. A. building to be constructed on West Main Street, Waterbury. The building will include all the Y. M. C. A. features and will be equipped with the latest improvements, including a large swimming pool and showers.

M. Rudman, of the Ross Bottling Works, Bangor, is to remodel a recently erected factory into an apartment house containing 16 apartments. F. A. Petterson, of Bangor, is architect. Each apartment will have complete bathrooms. Contracts are not yet awarded.

The town of Fort Fairfield is planning the erection of a new high school to cost about $150,000. The work will be under the direction of the school board. Plans have not been completed.

Harvey E. Swain, of Portland, is to erect a four-apartment house at Woodfords, wood, 2½ stories, 50x45; cost, $14,000.

The Salvation Army at Augusta is to enlarge its quarters and make improvements costing $10,000. Plans are in the hands of William R. Dimmock, architect, care of owners, 8 East Brookline Street, Boston, Mass.

A. M. Wells, Kennebunk, has been awarded the plumbing contract for the summer residence at Kennebunk Beach, to be built for H. W. Byron, from plans by Derby & Robinson, architects, of Boston, Mass. Cost, $30,000.

The Nasson Institute of Sanford, H. G. Allen, of Springvale, Me., chairman of trustees, is to build dormitories costing $40,000. F. A. Rumery, of Portland, has the general contract.

Washington

Seattle.

Marking the beginning of a building construction program for the year 1922—permits have been issued for one $1,000,000 office building and for a number of smaller projects of a business nature.

An unusually large number of residence permits were issued in January, when a particularly fine stretch of good weather was experienced. Active construction dropped off slightly toward the latter part of the month, due to an unexpected flurry of snow and continued cold weather. However, the applications filed, and the number of inquiries indicate that within the next 30 days, an almost unparalleled number of building projects will be undertaken, considering the season of the year. The most encouraging feature of the building situation at present is the early beginning of activities in this field, and contractors, building material dealers and architects are prepared for an excellent spring season in all building lines.

The million dollar bank and office building to be erected will be built by the Dexter-Horton Estate, and will replace the Third Avenue side of the New York Block, between Third and Second Avenues on Cherry Street. It will be thirteen stories high, and will be the first unit of an office building that will eventually extend through the block from Third to Second, and which will be 15 stories high on Second Avenue. Architect John Graham, L. C. Smith Building, prepared the plans and will supervise the work.

Another project to be undertaken immediately is the $500,000 six-story office and store building to be erected by the Metropolitan Building Company, which will be an annex to the present White Building. Bids will be called within two weeks for this building, and actual construction work will begin before April 1.

Contract for the erection of the Ravenna Grade School has been let by the Seattle School Board to Scherer & Carlson, 111 Pine Street, on their bid of $77,890. The proposed structure completed will cost $150,000. Contracts for the plumbing, heating, ventilating, etc., will be let in the near future.

Other Cities in the State.

Indications pointing to an active construction year in Tacoma, both in large and small buildings, are reported by architects and contractors of Tacoma. A prominent architect states that immediately after the first of the year, a large number of inquiries came from those planning construction work for the early spring, and that the entire prospect is most encouraging.

Revision of Tacoma's building code to bring it up to date, and place it on an equal basis with the new codes adopted by the larger cities of the United States is now being worked out by a committee representing architects, engineers and contractors of the city, under authorization of the city council. The building codes of the larger cities throughout the country have been carefully studied, and the aim is to have the new code strict and explicit, as free as possible from ambiguities, and based on the national underwriters' code.

Ben Olson Co., 1130 Commerce Street, Tacoma, received the contract for plumbing and heating in the Salvation Army Hotel, on a bid of $3,274.

The General Hospital Association, of Everett, has raised funds of $150,000 with which to construct a new hospital on a site to be selected in Everett. Construction will be supervised by Bebb & Gould, Seattle architects, and plans will be prepared by Stevens & Lee, of Boston. Building operations are to start in the early spring.

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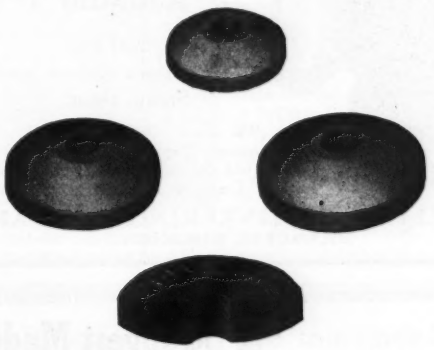

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One of the small things that help to build reputations

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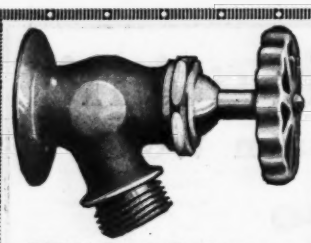

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Oregon

Portland.

Building in Portland showed a decided improvement during the first month of the year, with the announcement of several building projects of importance, and the statement from architects that plans are on their boards for a number of important structures on which work will begin before spring.

O. Holsman, of I. Holsman & Co., announces that an 8-story brick building to be used for business establishments and specialty shops will be erected at Third & Alder Streets, at a cost of $200,000. Plans are being prepared by Claussen & Claussen, architects.

Plans for a religious school building costing $100,000, to be erected in Portland during the year by the Temple Beth Israel at 13th and Main Streets, are now being prepared by Sutton & Whitney, architects. Building is to be a three-story structure, 60x100 ft., and construction will start in the early spring.

One of the most important plumbing and heating contracts recently let in Portland was that given to W. S. Fleming for heating and plumbing in the new $1,000,000 Elks Temple in that city. The amount of the bid has not been made public.

The Oddfellows Lodge, Portland, plans the erection of a new $50,000 temple in that city. The building will be four stories high, covering a site 100x100 feet, and will contain an auditorium capable of seating 2,500 persons. Construction work will be rushed on the structure.

Bids for the proposed monastery to be erected for the Sisters of Precious Blood at 1935 East Salmon Street, will be called for within two weeks by Jacobberger & Smith, architects, Board of Trade Building. Structure will be three stories high, 162x79 feet in size, costing $80,000. Separate bids will be called for plumbing, heating and other subcontracts.

The first definite move toward the immediate construction of the proposed Shrine Hospital in Portland for crippled children, was taken recently when the building committee inspected proposed sites and submitted its report to the Shrine. The structure will cost $250,000, and construction work is to be carried forward as promptly as possible.

Fox & Co., of Portland, submitted the low bid for plumbing in the proposed $200,000 building to be erected for the Gardeners' & Ranchers' Association on the east side, and this firm is expected to receive the contract.

The Portland Master Plumbers' Association, through L. S. Beard, its secretary, has submitted a protest to the city council at the delay in inspecting plumbing in residences. It is pointed out that home builders are put to heavy added expense, when plumbing inspections are delayed, and that under present conditions plumbing firms are often forced to keep trenches open for several days due to delay in inspection. The Tax Commission recently cut the personnel of the plumbing inspection department and materially hampered the city.

Other Cities in the State.

C. L. Goodrich, architect, Abington Building, Portland, has been selected to prepare plans for the proposed new church to be built at Salem for St. Paul's Episcopal Church. The structure will be of brick and tile, 40x100 ft., with two wings of smaller dimensions, and will cost approximately $40,000.

The Masonic Order of Eugene is contemplating the erection of a new temple in that city to cost approximately $150,000. Site has been selected.

California

Los Angeles.

Building activities in Los Angeles continued so satisfactory, that even the most optimistic are surprised. The plumbers and carpenters are the busiest men in the city. With a big demand for all kinds of building materials in the vicinity of Glendale and Burbank, six lumber yards are doing a good business.

S. M. Valentine will erect a seven-room residence in Windsor Heights. Plans include tile bath, gas furnace, double garage and playroom, cost, $12,000.

E. Fallas, 587 North New Hampshire Avenue, will erect two twenty-four room flats and one sixteen room flat at Melrose Avenue and Berendo Street. Buildings are to be of frame and plaster construction and will cost $45,000.

Milwaukee Building Co. is preparing plans and will erect a five-story, reinforced concrete hotel building in Hollywood, at a cost of $1,250,000. The first unit is to be started in February.

Architect F. J. Soper, 1122 Story Building, has prepared plans for a new school building on the Fifteenth Street school site, San Pedro. The building is to be two stories and basement, brick construction, will contain ten class rooms and cost $85,000.

A three-story brick apartment house is to be erected at 676 S. Coronado Street, for Fred W. Siegel. The building will be 57x120 feet and will contain thirty apartments and cost $100,000. The work will be done by sub-contract, under the supervision of the owner.

A one-story warehouse for Joe Toplitsky is to be built on Santa Fe Avenue near Seventh Street, at a cost of $20,000. The building is to be of brick, 120x120 feet.

Working plans are now being prepared for a new school building, to be erected on Berendo school site. It will be two stories and basement, 179x40 feet, and will contain ten class rooms, lavatories, boiler room and lockers. The cost will be $85,000.

Architect Harold Cross, 1132 Merchants National Bank Building, is taking sub-bids for a residence court of six duplex units, garages and laundry building, at West Adams Street and Raymond Avenue, for Frank Jansen. Each apartment will contain five rooms, tile bath, gas radiators and automatic water heater.

A new school building to cost $93,500, is to be erected on the East First Street school site. The building is to be of brick, two stories, and basement, and will contain six class rooms, auditorium, offices, lavatories, and toilets. John P. Krempel and Walter E. Erkes are the architects.

A two-story class A and loft building, 100x120 ft., will be erected at the corner of Spring and Court Streets at a cost of $52,363. The plumbing contract was secured by J. Hokom.

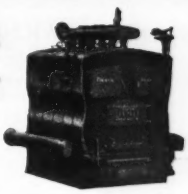
William Davidson, county mechanical engineer, is preparing plans for a group of six infirmary buildings to be erected at the county farm near Downey. Each will be 34x160 ft., one story, and will contain nurses' quarters, baths, lavatories and a thirty-two bed ward. The buildings will be of frame construction and will cost $50,000.

The general contract has been awarded to T. Bennett for erecting an addition to and remodeling the Miramonte school building for the sum of $14,185. The steam heating contract was awarded to Marshall-Lock Co.

Architect Wm. Ache, 1616 Fourth Avenue, has prepared plans for a two-story, brick store, office and flat building on Vermont Avenue, near Jefferson Street, for Dr. L. C. Hunt. The building will cost about $20,000.

A new two-story brick school building is to be erected at Sawtelle at a cost of $72,000. The building will contain

Pierce Smokeless Updraft Boiler



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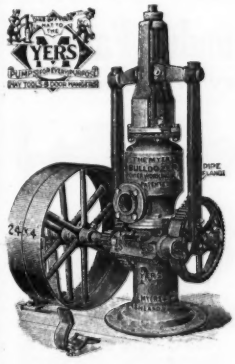

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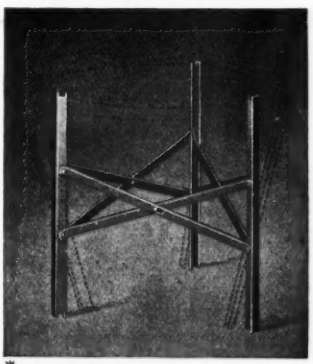

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Made of steel—strong and unbreakable. Easily installed. Fits closely to rim of boiler.

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No. 1 Fits boilers from 30 to 52 gal.
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Unexcelled in design, material and workmanship.
Interior thoroughly tinned.
No iron used in construction.
Guaranteed against collapse.
Always satisfactory. You can safely install them on your best jobs.

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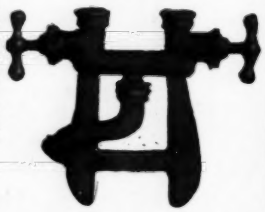
Burman "Unit" Laundry Faucet
Simplifies Laundry Tray Installations

Two valves take the place of four faucets, eliminating a lot of pipe, fittings and pipe carriers.
The "Unit" supplies water of temperature desired to either tray, by shifting spout.
Costs less to install, is more convenient to use, lasts as long as the tray and makes a better looking job.
Furnished with hose attachment.



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PLENTY OF
HOT WATER
NO EXTRA EXPENSE

EASILY connected to outside of steam, vapor or hot water boiler; does away with fuel-wasting coil in fire pot. Uses surplus heat of boiler. Does not overheat or underheat. Will not burn out, once installed.
An unusual opportunity for live dealers. Order now and be prepared for the demand being created. We furnish co-operation and practical sales helps to give you full benefit of our national advertising. List price, $16.00.

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THE HOTSTREAM HEATER CO.
"Makers of Heaters that Heat"
CLEVELAND, Ohio

The Hotstream *We also make a complete line of Gas and Kerosene Water Heaters.*

INDIRECT WATER HEATER

five class rooms, offices and auditorium. The board of education will advertise for bids soon.

Ley Bros., 14 Balford Building, Western Avenue, have completed plans and will erect a two-story, twenty-room flat building at 232 South Alexandria, for George LeDerle.

A two-story, ten-room residence is to be built at Fremont Place, near Mueth Street at a cost of $12,000.

Architect John P. Krempel and Walter E. Erkes, Bradbury Building, are preparing plans for the new East First Street school building. The building is to be of brick with six class rooms and auditorium, and will cost approximately $93,500. Bids will be taken soon.

Architect Richard D. King, 519 Van Nuys Building, is taking bids for erecting a group of seven factory buildings near Burbank for the American Aluminum Product Co. The buildings are to be of brick construction.

Two two-story, twenty-room flat buildings are to be erected on San Marino Street, near Eldon Street, also two four-unit double garages.

C. G. Wilkinson, H. W. McFarlane and Dudley R. Wells have opened a plumbing establishment on Highland Avenue and Santa Monica Boulevard under the name of C. G. Wilkinson Co.

Other Cities in the State.

Bonds in the sum of $365,000 have been voted and sold for erecting new high school buildings at Porterville. Coates and Traver, Fresno, are the architects.

The Anaheim Sugar Company will build a $250,000 addition to their sugar factory at Anaheim.

A group of seven factory buildings, to be erected at Burbank, for the American Aluminum Metal Products Company, is to be built from plans prepared by Architect Richard D. King.

The San Diego board of education is taking bids for erecting a Junior high school in Balboa Park. The building is to be two stories, Spanish style, to cost $300,000. Thomas C. Kistner is the architect.

E. J. Saunders, chairman of building committee, is taking bids for the proposed four-story, hollow tile church building, for the Methodist Episcopal Church of Whittier. The building will be 40x128 feet and contain assembly room, class rooms for Sunday school and offices.

THE PROVINCE OF ONTARIO.

Hamilton.

Business in Hamilton is at the present time in a very satisfactory condition in the plumbing and allied trades, the plumbing and heating of some of the larger buildings erected last year being in course of installation. The Nurse's Home City Hospital, the Nurse's Home St. Joseph's Hospital, by the Robt. Fitzsimmons Co., The Technical College and The Prince of Wales School, by the Adam Clark Co., and the factory building of The Firestone Rubber Co., also by the Fitzsimmons Co., are some of the most important of the jobs on hand.

The Board of Education for Hamilton, has just placed the contract for a new school building of 34 rooms, to be erected in the east end of the city, at an estimated cost of $400,000. The Secord Construction Company, of Brantford, were the successful tenderers for the construction of the building, their price being $299,000. Tenders for the heating and plumbing have not yet been called.

Some additional contracts lately placed are the following: Staunton & Mitchell have the work on the alterations on

the St. Joseph's School, Herkimer Street, also on the new annex to this building.

Jas. Saynor has the contract for three dwellings on Holton Avenue, for W. Atkinson, and the store and apartment building on King Street, East, for Gibson & Robertson. The Drake Avery Co. has the heating of this building.

George MacDonald is the contractor for the Manion residence, Rothesay Avenue, and for one for Mr. H. W. Farr, on Edinburgh Avenue.

J. H. Kerr has the heating and plumbing on the apartment building, Main Street, East, being erected, by Bethune & Dirks.

The Robert Fitxsimmons Co. have the plumbing and heating on the addition to the St. Lawrence School, Catherine and Picton Streets.

A. Beare will do the work on the alterations for Mr. Dunlop, Catherine Street, South, and the residence for Chisholm Bros., Balmoral Avenue, South.

BRITISH COLUMBIA.

Vancouver.

Reductions in the prices of some materials have served to stir the local plumbing and heating trade to the belief that a material improvement in conditions is soon to be noticeable. During the past week the prices of baths decreased approximately $5. There have also been some reductions in other plumbing fixtures and in brass goods—in the majority of cases amounting to about ten per cent. Water pipe also declined slightly. While it is stated that the recent reductions will materially aid the local situation, it is, nevertheless, pointed out that before conditions reach their pre-war level, further decreases will be necessary. But even the price reductions that have already been effected, will, it is asserted, have a decidedly favorable bearing on building operations in the spring.

In the meantime, while most of the local activity is confined to jobbing—repairs and replacements—Vancouver firms are fairly busy and the trade is almost fully employed. New work continues slack and is unlikely to change until the spring building season opens.

R. Townley & Son reported optimistically regarding the outlook but were finding conditions somewhat slack at present. Prices of material had begun to come down, but much more was looked for in that line.

The Smith Heating & Plumbing Co. found jobbing fairly active though new work was almost at a standstill at present. Prospects were reported as good. Several cuts in the prices of materials, while not likely to demonstrate any immediate effect, would in the near future, prove very beneficial to building prospects for the coming year. Several other firms reported along the same lines.

A court case of interest to the plumbing trade generally has been settled in the decision of the local magistrate that payment need not be made for plumbing work performed on Sunday. Joseph Anticzuk, a local plumber, was engaged to install a boiler in a local residence.

The need of haste was strongly urged by the customer and as a result, Anticzuk, to rush the work, kept right on when Sunday came. At the conclusion of the job, a dispute arose as to the price to be paid and the matter was taken into court. When, during the evidence, it was shown that part of the work had been done on Sunday, the magistrate immediately struck out that portion of the bill and warned the plumber the work must not be done on Sunday in this Province.

The case has aroused much interest among the trade locally as emergency calls are not infrequent, and it is not unlikely that if this ruling is to prevail, a decision to refuse Sunday "hurry-up" calls, except in very particular cases, will be made.

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Sewer, Tide and Back Water Trap

Always Works — Positive Flush

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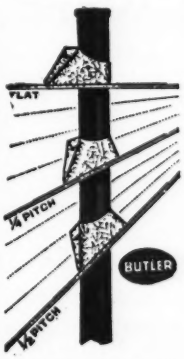

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A special feature is the "V" which forms a metal spring. This assures a perfectly air-tight joint.

Hugs any pipe—water tight—fits any angle. Adjusts itself without turning or twisting.

Galvanized iron or copper.

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No. 250

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Get our special prices for your show room or window display.

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A ONE-PIECE LEAD FLANGE, 4 LBS. TO SQ. FT.

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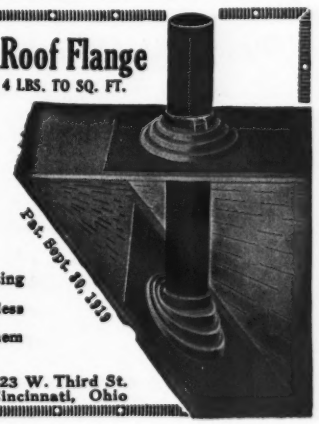
Extremely pliable—no seam.
Allows for settling of roof or pipe.
Adjustable to any angle.
Allows for contraction and expansion.
Collapse one side—draw out other.
Draw up band, compressing lead around pipe.
On like a flash—costs less than hand made.
Ask your jobber about them or write us for particulars.



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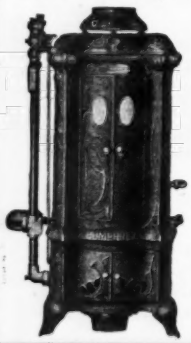

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For precision of manufacture and for absolute reliability

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have stood unrivaled for more than three generations.

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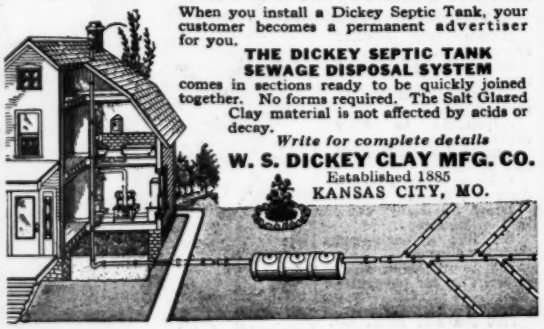
Thousands Operating Successfully!



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THE DICKEY SEPTIC TANK SEWAGE DISPOSAL SYSTEM

comes in sections ready to be quickly joined together. No forms required. The Salt Glazed Clay material is not affected by acids or decay.

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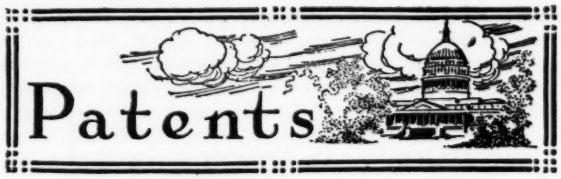
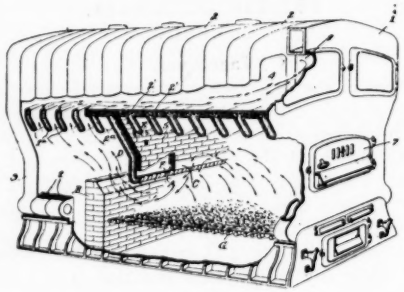


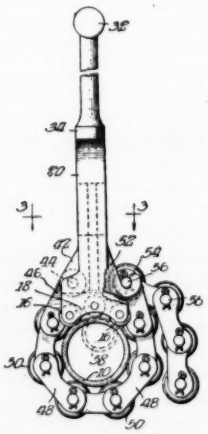
Heating Department.

1,402,843. Boiler Construction. James Doherty, Chicago, Ill. In a furnace of the type described, the combination with a fire-box having a horizontal, perforate updraft grate and a main air supply through the grate, of a transverse baffle wall containing water and coacting with the rear part of the fuel bed on said grate to form therewith a throat passage, means for admitting supplemental heated air to the fire-gas flow in said passage comprising an air duct associated in parallel relation with the lower edge of said wall, one side of said duct being exposed to the radiant



1,402,843.

heat whereby it heats said supplemental air, and the other side being shielded therefrom and subject to the cooling effect of the water in said wall, and means constituting the exit from said duct adapted to direct said heated air crosswise of the gas flow through said passage, said air duct exit and main air entrance being correlated to produce a velocity of said heated air flow adapting it to mix with said fire-gas flow.

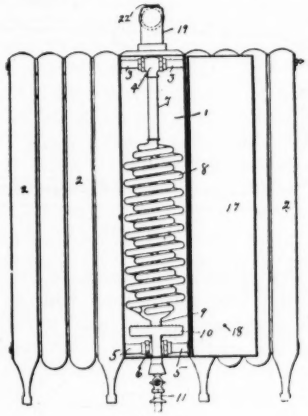


1,402,968.

1,402,968. Pipe Cutter. Walter J. Sanders, Chicago, Ill., assignor of one-half to John H. Sanders, Chicago, Ill. In mechanism of the class described, a U-shaped frame member having oppositedly disposed side members, lying in a plane through the axis of the pipe to be cut, a plurality of wheels on the end of each such side members adapted to travel in the arc of a circle about a pipe to be cut, a crosshead reciprocable in the U-shaped member, a pipe cutting chain con-

nected to the crosshead between said pluralities of wheels passing around the pipe, means for moving the crosshead to tighten the chain, and means for moving the U-shaped member and all parts carried thereby about the pipe, for the purposes set forth.

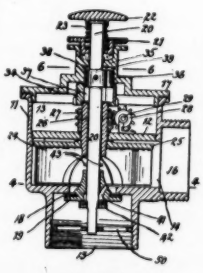
1,402,522. Gas Water Radiator. John G. Meyer, Baltimore, Md. In a gas water radiator the combination of a case, a door for said case, radiator sections arranged on opposite sides of said case, a water coil within said case and having a central upright section connected at its upper and lower



1,402,522.

ends with said radiator sections, a burner in said case to heat said coils, an opening at the upper end of said case, a pipe fitted in the opening at the top of the case and having two openings therein, and a valve to control the openings in said pipe.

1,402,771. Flushing Valve. Stuart Otto Johns, Taitville, Wellington, New Zealand. In a water flushing valve, a valve casing having a recess and also provided with a passage therethrough; rotary means in such casing adapted to be acted upon by the water passing through said casing; a longitudinally slidable spindle in said casing, said rotary means rotatable relatively to said spindle; a valve for the passage controlled by the spindle; a spring controlling that spindle, to keep the valve normally closed; a block slidable with the spindle, and having a tooth which normally engages within the recess of the casing; and gearing, connecting said rotary means with said block, and operating to position the latter relatively to and coincidently with said recess.



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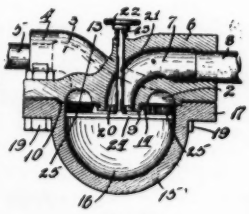

1,402,821.

1,402,821. Scale Trap. William Wishart and Albert H. Morrell, Clinton, Iowa, assignors to Clinton Refrigerating Company, Clinton, Iowa, a corporation of Iowa. A trap comprising a plate having an open chamber therein, a passaged inlet elbow formed on said plate, a passaged outlet elbow formed on said plate and communicating with said chamber, a filler screen covering said chamber, a chambered bottom removably secured to said plate to hold the

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Reverse Trap
XPDNC Reverse Trap Closet of latest design embodies the newest ideas in Reverse Trap construction.
It is offered where a powerful working, cleverly designed closet of this type is desired.
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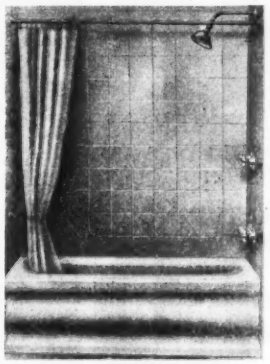

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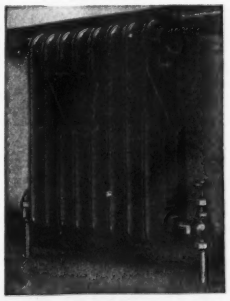

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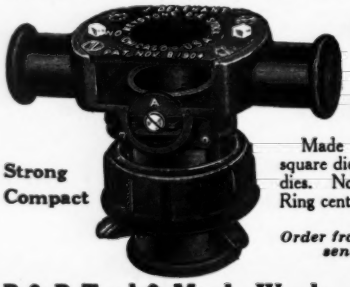

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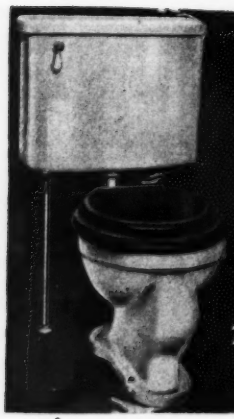

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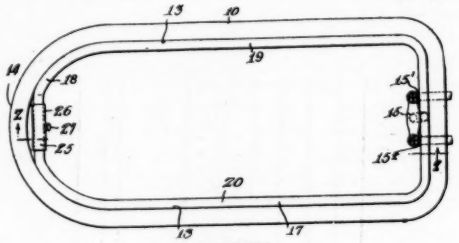
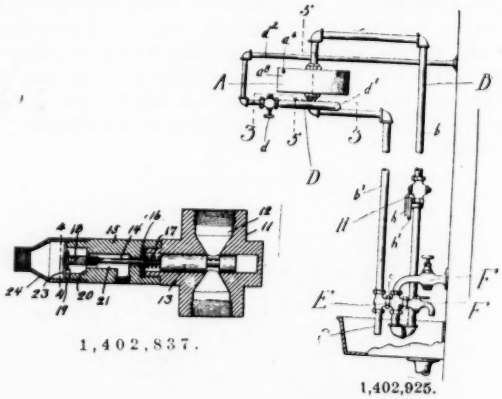
ZWERMANN COMPANY
Robinson, Illinois

screen in place with the chamber thereof communicating with the passaged inlet elbow to permit a liquid to flow from the inlet elbow into the chambered bottom and out through the screen through the plate chamber and said outlet elbow, said screen serving to filter out the scale and other material carried by the entering liquid, and externally operable means in said chambered bottom adapted to be operated to clean the screen without interrupting the operation of the trap.



1,402,974.

1,402,974. Shower-Bath Apparatus. Clarence S. Slatcher, Philadelphia, Pa. The combination with an ordinary bath tub having sides and an inclined head portion and a spigot at the foot portion of the tub, of a substantially horizontal continuous pipe embodying side portions connected at their forward ends by a curved transverse head portion, said curved head portion having a straight intermediate portion which is spaced from the inclined head portion of the tub providing a passage while the side portions and curved portions of the pipe contact with the inner walls of the tub, said straight intermediate portion being provided with apertures and the side portions having apertures, said pipe further including a transverse foot portion connecting the side portions and resting upon the spigot to be supported thereby, the forward end of the pipe being entirely supported by contact between the same and the walls of the tub, and an apertured sleeve pivotally mounted upon the straight intermediate portion and operating in said passage, and means for connecting the transverse foot portion with the spigot for supplying water to said transverse foot portion.



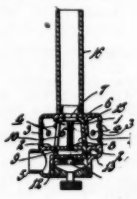
1,402,837. 1,402,925.

1,402,837. Gas Shut-Off Device. Joseph W. Christian, Haverhill, Mass. In a water heating system, a boiler, a heater therefor, a fuel burner for said heater and a fuel conductor leading to said burner, a shut-off valve for said conductor, normally actuated to be moved to closed position, fusible holding means for retaining said valve in open position, a chamber in which said holding means is located, a pipe leading from the boiler to said chamber and a waste outlet leading therefrom, and temperature controlled means normally closing said pipe and adapted to open the same when the boiler temperature reaches a predetermined point, to

permit the discharge of water from the boiler to said chamber, thereby to fuse said holding means and permit closure of said valve, and means connected to said valve arranged to prevent the discharge of water from said chamber when the valve is in its closed position.

1,402,925. Water Heater. Adolph Flick, Deer Park, and Oscar Van Kirk, Cincinnati, Ohio. In a water heating device a boiler comprising a tank, a series of vertical flanges extending radially through the tank and forming therein compartments and having a common discharge at their center and arcuate ribs between the flanges and extending vertically from the bottom of the tank and having a continuous circuitous way, formed by the ribs, extending from the outer wall of the tank to the common discharge.

1,403,186. Spigot Tap. William Edgar Muntz, London, England. A device of the character described comprising, a casing, a spigot plug tightly but rotatably fitted therein, a diaphragm in said plug at an angle to its axis of rotation for dividing it into two parts, a corresponding diaphragm in said casing, a common outlet for the plug and casing, each part of the plug and casing being in communication with the said outlet, means for admitting a different fluid to each part of said plug and casing, the walls of said plug and casing being provided with pairs of inter-registering slots with a slot of each pair tapered, and means for rotating the plug so as to synchronously regulate the outflow of a mixture composed of said two fluids in any desired ratio to each other.



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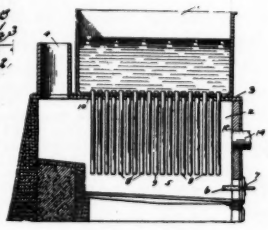
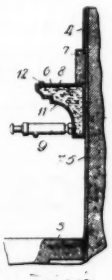


1,403,109.



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1,403,109. Water Heater. John Richardson, West Berkeley, Calif., assignor of one-half to Mary B. Richardson, Berkeley, Calif. In a water heater and in combination with a furnace having an open horizontal top, a water tank adapted to normally close said horizontal opening in the top of the furnace and having in its bottom a plurality of staggeredly arranged tubes extending from the bottom of the tank through said horizontal opening in the top of the furnace and presented vertically within the fire box of the furnace, said tubes being closed at their lower ends and open at their upper ends, and with the open upper ends extending slightly above the bottom of the said tank, and said furnace also having a smoke stack and a flue connection in the fire box on opposite sides of the staggeredly arranged tubes, said smoke stack and said flue connection establishing an exhaust and intake respectively for the furnace; whereby smoke may be introduced into the furnace from an exterior source of supply and passed around the staggeredly arranged tubes before being exhausted through the smoke stack substantially as and for the purpose described.

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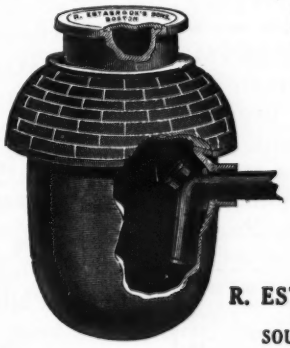

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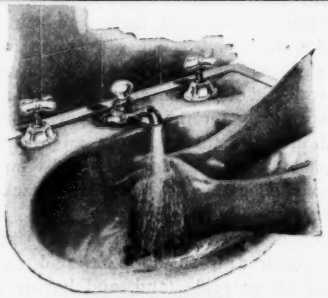

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